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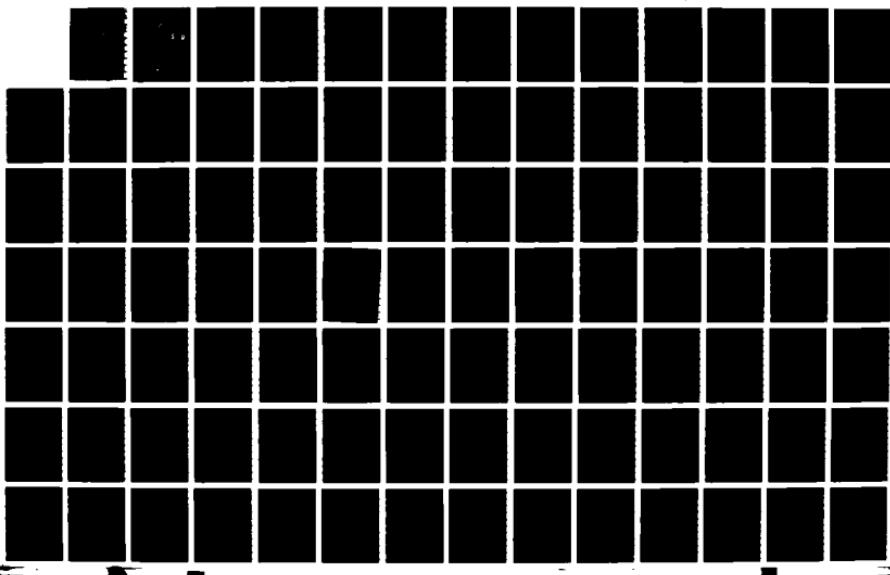
INVESTIGATION OF THE INTER-RELATIONSHIP BETWEEN BASE
PAVEMENT STIFFNESS R. (U) MCQUEEN (ROY D) AND
ASSOCIATES LTD OAKTON VA R D MCQUEEN MAR 88

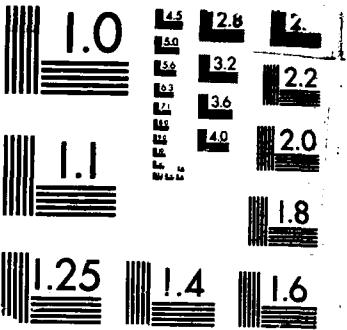
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MICROCOPY RESOLUTION TEST CHART
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Investigation of the Inter-relationship Between Base Pavement Stiffness and Asphalt Overlay Compaction

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March 1988

Final Report

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16. Abstract <p>→ This report summarizes a research project to investigate the degree, if any, that base pavement support influences the compactibility of an asphaltic concrete overlay. As a secondary objective, the study enabled a comparison of the FAA Eastern Region in-place air voids compaction standard with the FAA National percent Marshall density compaction standard.</p> <p>Field data were collected on three paving projects in FAA's Eastern Region. Nondestructive testing (NDT) was used to quantify the stiffness of base pavements prior to overlay. After overlay construction, the unit weights of the asphalt overlays were determined at the same locations where NDTs were performed, and in-place air voids and percent Marshall densities computed. Statistical techniques were employed to investigate correlations between stiffness and asphaltic concrete density (i.e., unit weight, in-place air voids, and percent Marshall density).</p> <p>Although a mild correlation between stiffness and density was found at one project, no general trends were detected for the other projects or from regression analyses performed on combined data bases. While this may suggest that base pavement stiffness is not a primary variable in affecting overlay compaction on airport pavements, the effect of stiffness may have been masked by other external variables, such as temperature, rolling, mix properties, quality control, etc. Finally, apparent inconsistencies were observed between FAA Eastern Region and FAA National density acceptance plans with regard to acceptable quality level and payment.</p> <p>To better quantify the inter-relationship between base pavement stiffness and asphaltic concrete compaction, a designed experiment is recommended to eliminate the effect of outside variables. It is further recommended that the FAA Eastern Region and National density acceptance plans be re-evaluated to assure consistency. <u>Keywords:</u></p>		
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METRIC CONVERSION FACTORS

* Is = 2.54 inches². For other sheet conventions and more detailed tables, see *Table 2B, Units of Strength and Durability, Plate A2-75, 8D Casting No. C13.16-250.*

PREFACE

This study was sponsored by the Federal Aviation Administration Program Engineering and Maintenance Service (APM) and performed by Mr. Roy D. McQueen of Roy D. McQueen & Associates, Ltd. (RDM). Significant contributions were made by Bob R. Aycock of RDM, and Carl Steinhauer and William DeGraaff of FAA. Dr. Aston McLaughlin was the FAA Project Manager for the study, and his assistance and counsel are greatly appreciated. RDM also wishes to acknowledge the cooperation of Pan Am World Services, Campbell and Paris, Engineers, and Greiner, Inc. for providing the acceptance testing data that was incorporated in this study.



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I. INTRODUCTION

Due to the high tire pressures and gross wheel loads of modern aircraft, airport pavement construction requirements are necessarily more demanding than those required for road construction. This is especially true of asphaltic concrete, both in terms of material and compaction requirements. Where highway specifications normally require an asphalt surface to be compacted to a percentage of 50 blow Marshall density, the Federal Aviation Administration's (FAA) P-401 specification¹ requires asphaltic concrete to be compacted to a target density of 98% of 75 blow Marshall density for air carrier airports.

With incorporation of a statistically based acceptance procedure for asphaltic concrete into the FAA P-401 specification, payment adjustment factors were specified for various levels of noncompliance to the density standard. The use of a prescribed acceptance procedure tended to make the specification more enforceable, especially in terms of assessing reduced payments for material not complying with the specification.

While these acceptance procedures may have heightened a contractor's awareness of the need for meeting the compaction standard, it also resulted in concern that in some instances, achieving the standard may not always be possible. Both contractors and engineers were particularly concerned that the density requirements may be overly restrictive for overlays on existing pavements that were either extremely weak or variable, which was reportedly the case at many smaller general aviation or commuter airports.

In his study on field compaction of bituminous mixes², McLaughlin identified 14 parameters which affect pavement compactibility. Of these, high stability, low material temperature, improper equipment, testing error, or weak support systems were found most often to be at fault.

While contractors generally disagree that lack of compaction is in any way related to process control, their most common view is that lack of compaction is most often due to weak or yielding pavement layers. While proofrolling was sometimes attempted prior to an asphalt overlay to identify areas which could be exempted from the compaction standards, the results were often inconclusive due to the subjective nature of this process. With many thousands of dollars, as well as the future serviceability of a rehabilitated pavement system at stake, it is generally agreed that a more objective quantitative evaluation process is required.

However, although the effect of base pavement support on asphalt compactibility does have intuitive appeal, there is no general agreement that base pavement support is a primary variable in influencing the compaction of an asphaltic concrete overlay. The FAA has argued that in developing the acceptance limits for P-401 density, a wide variety of support systems were examined.^{3,4} According to FAA, this resulted in a choice of an Acceptance Quality Level (AQL) for asphalt density, which not only addressed the needs of the FAA, but also the condition of the base pavement.

With nondestructive testing (NDT) generally recognized as a valid analytical tool for pavement evaluation, it was believed that NDT could be used to objectively determine whether or not base pavement stiffness affects asphalt compaction, and if it does, to what extent. If the stiffness of the support system does affect compaction, then it is

hoped that a limiting pavement stiffness can be established below which a lesser density standard, or a methods specification, can be applied.

II. OBJECTIVES

The basic objective of the research was to determine the degree, if any, that base pavement support influences the compactibility of an asphaltic concrete overlay. If pavement support was found to affect overlay compaction, and, if that effect could be quantified then a limiting support condition would be determined, below which consideration could be given to modifying the current P-401 density standard.

To achieve these objectives, it was decided to utilize NDT to quantify pre-overlay pavement support conditions. Since primary FAA guidance on nondestructive testing involves the use of the Dynamic Stiffness Modulus (DSM)^{5,6}, pavement support would be defined as the DSM at a particular test location.

As required by the FAA, asphalt compaction is defined as the percent Marshall density of field samples. To allow for economical acquisition of a large data base without operational disruption or damage to the new pavement surface, the field unit weight of the overlay was determined by nuclear density testing. Any required calibration of the nuclear density device was accomplished through correlation with core density samples.

To accomplish the basic objectives of the study, specific procedures were determined as follows:

1. Perform nondestructive testing at three airports in FAA's Eastern Region to obtain data on pavement support conditions prior to programmed overlays.

The NDT program was designed to obtain data for DSM computation and for possible future layered elastic analyses. Approximately 100 NDT's were performed at each location, within one or two days of the scheduled overlay.

2. Upon completion of the overlay, perform nuclear density testing at the same locations as the NDTs to determine the unit weights and relative density of the overlays. Several cores were also taken at NDT locations at each airport to establish a core density data base and for correlation of the nuclear density device. Since the FAA's Eastern Region uses in-place air voids⁷ as its compaction standard, the unit weights were used to determine both the percent Marshall density and the in-place air voids at each location.
3. Perform linear and nonlinear regression analyses to determine whether a correlation between DSM and asphalt density (i.e., percent Marshall density or in-place air voids) exists and could be quantified.
4. Determine whether a limiting base pavement stiffness (i.e., DSM) could be identified, below which acceptance procedures other than those currently in use could more aptly apply.

5. Collect construction acceptance test data to evaluate mix properties or other variables which may have influenced compaction.
6. Although not originally envisioned as part of the research, the collection of both percent Marshall density and in-place air voids data enabled a comparison of both compaction standards.

III. PROJECT DESCRIPTIONS

For field data acquisition, three candidate airports were selected in FAA's Eastern Region. In selecting sites, an attempt was made to obtain data at airports having relatively weak and stiff support conditions, with differing base pavement thicknesses and subgrade soils. Also, since most concerns on compactibility were expressed for overlay construction, it was decided to limit initial candidate sites to those with overlay construction.

After consultation with the FAA, the following projects were identified for field data collection:

1. Teterboro Municipal Airport -
Runway 1-19 Overlay
2. Leesburg Municipal Airport -
Parallel Taxiway Overlay
3. Ocean City Municipal Airport -
Apron Overlay and Parallel Taxiway Extension

TETERBORO MUNICIPAL AIRPORT PROJECT

Runway 1-19 was constructed in the 1960's and had been rehabilitated in several stages. The runway was most recently overlaid in 1974 with a variable thickness overlay ranging from one to five inches. This resulted in an average pavement section of 7 to 11 inches of asphalt on a 4 to 5 inch crushed stone base. The pavement was constructed on

approximately four feet of sandy fill underlain by a silty subgrade. Subgrade CBR was reported as two (2) to six (6).

The project under study required an average three inch overlay to be constructed with a variable thickness truing and leveling course, followed by a uniform two inch final surface. Prior to overlay construction, an extensive crack sealing program was undertaken. All nondestructive tests were performed after construction of the truing and leveling courses, with density tests performed after construction of the two inch wearing surface. This was in an attempt to factor out any effects that variable thickness overlay construction might have on the compactibility of an asphalt overlay. The project was constructed during July-August 1987. The governing specification for overlay construction was the FAA Eastern Region P-401 specification.

LEESBURG MUNICIPAL AIRPORT PROJECT

The parallel taxiway to the airport's only runway (Runway 17-35) was constructed in the late 1960's. Very little rehabilitation had been accomplished prior to this project. The pavement structure prior to overlay consisted of three inches of asphalt on a six inch crushed stone base. Pavements were constructed on a silty clay subgrade with a reported CBR of approximately 10.

The project required construction of a uniform two inch overlay over the length of the taxiway after a crack sealing program. Nondestructive tests were performed on the surface of the existing pavement with density tests performed after overlay construction. The project was constructed in July 1987. The governing specification for the overlay was the FAA Eastern Region P-401 specification.

OCEAN CITY MUNICIPAL AIRPORT PROJECT

The apron at the Ocean City Municipal Airport was constructed in the mid-1960's. Very little rehabilitation had been accomplished prior to this project. The existing pavement consisted of one to one and a half inches of asphalt on a six inch soil cement base. The pavement was constructed on a sandy (SM, SC, SP) subgrade with reported CBR of approximately 10.

Due to the deteriorated nature of the existing asphalt surface from soil cement reflection cracking, most of the existing asphalt surface was milled. A variable thickness, one inch minimum leveling course was constructed prior to construction of a 1.5 inch uniform thickness surface course. Nondestructive tests were performed after leveling course construction in order to factor out the effects of variable thickness overlay construction on compactibility. Density tests were performed after construction of the 1.5 inch wearing surface. Specifications for overlay construction conformed to the FAA Eastern Region P-401 specification.

The project also consisted of construction of an extension to the airport's parallel taxiway system. Required pavement thickness consisted of seven inches full depth asphalt pavement on compacted subgrade constructed in three lifts of three inches, two inches and a final two inch lift. Nondestructive tests were performed after construction of the second lift (i.e., on five inch asphalt pavement) with density tests performed after construction of the final uniform two inch surface. Again, project specification required asphalt pavement construction to conform to the FAA Eastern Region P-401 specification.

IV. DATA COLLECTION

At each project, field data collection consisted of:

1. Assembling contract documents (i.e., plans and specifications).
2. Laying out nondestructive and density test locations using reproducible control points.
3. Performing nondestructive tests (NDT) prior to overlay construction.
4. Assembling acceptance and quality control test results (performed by others) as required by the FAA Eastern Region P-401 specification.
5. Performing density tests at previously referenced nondestructive test locations after overlay construction.
6. Obtaining core density test data (performed by others) at selected nuclear test locations for calibration of nuclear test devices.

NONDESTRUCTIVE TESTING

Since FAA guidance on nondestructive testing references the Dynamic Stiffness Modulus (DSM) using a vibratory test

device^{5,6}, this was the control test utilized for the correlation analysis. In normal practice, the primary purpose of NDT is to determine the dynamic properties of pavement systems without need for disruptive conventional testing. Pavement response to the dynamic loading simulates the effect of moving wheel loads. The resultant data can be used as reliable input for computer analysis which utilizes both conventional and elastic theories for pavement design and evaluation. Advantages of NDT include: (a) little interference with airport operations; (b) rapid data acquisition; and (c) low cost of test operation and data processing. Thus, it becomes feasible to acquire the quantitative data base necessary to meaningfully evaluate the varied performance of existing pavements.

For the purposes of this study, nondestructive testing was utilized to determine the stiffness of various pavement structures prior to receiving an overlay. Thus, in this case, NDT was not used as a tool to evaluate the expected performance of a pavement system with respect to aircraft loading, but rather to quantify pavement support conditions and determine if, or to what extent, these conditions could affect the compactibility of an asphalt concrete overlay.

NDT EQUIPMENT

The NDT equipment (Dynamic Loading System) used for the testing program was designed to generate a dynamic load on the pavement surface and measure the resultant vertical response of the pavement system, including subgrade, base courses, and surface layers. The equipment utilizes a micro-computer which allows rapid data processing during testing.

Roy D. McQueen & Associates' heavy mass Dynamic Loading System was used for the testing program. The machine is well capable of exceeding the minimum pavement deflection of 0.005 inch as required by the U.S. FAA and DOD, and is capable of performing Deflection Basin, Load Sweep (i.e., DSM), and Frequency Sweep test sequences.

The equipment generates a steady state sinusoidal dynamic load over a broad frequency range, and has the following performance features:

Static Weight	7,500 lbs.
Vibratory Force Range	500 lbs. to 10,000 lbs.
Frequency Range	3 Hz to 100 Hz
Load Plate	18-inch Diameter

Four response monitoring sensors were utilized for data recordation. The sensors were placed at the center of the loading plate, and at radial offsets of 18, 36, and 48 inches.

Although the equipment has been recently upgraded to include impulse testing, only the vibratory testing sequence was utilized for this project.

In a Federal Highway Administration (FHWA) research program conducted by the State of Connecticut⁸, the Dynamic Loading System ranked first, followed by the French Curviameter and Phoenix Falling Weight Deflectometer (FWD) respectively, in repeatability and operational reliability. Further, in a study conducted by Roy D. McQueen & Associates⁹, the Dynamic Loading System produced DSM results comparable to those obtained by the Waterways Experiment Station 16-kip Vibrator.

TEST PROCEDURES

Although the Work Scope for this project specified measurement of the Dynamic Stiffness Modulus of various pavements, the Deflection Basin test sequence was performed simultaneously with the Load Sweep test (for DSM computation), to provide data for possible future analysis.

The DSM (or Load Sweep) test procedure is described in References 5 and 6. The test is conducted at 15 Hz at two force levels, with the DSM defined as the slope of the resulting load/deflection curve, or:

$$DSM = \frac{F_1 - F_2}{D_1 - D_2}$$

where,

$F_{1,2}$ = Input Force, in kips

$D_{1,2}$ = Resultant Pavement Response at Center of
Loading Plate, in Inches

For asphalt pavements, the DSM at test temperature is adjusted to the DSM at standard 70 degrees F for pavements with asphalt three inches or greater (e.g., Leesburg and Teterboro), using the procedures detailed in the references. For regression analyses (see Section V), both the temperature adjusted and unadjusted DSM's were used. Although the pavement stiffness (i.e., Force/Deflection) could have also been used for analysis, the DSM has been shown to correlate closely with stiffness¹⁰.

As described in Reference 10, the Deflection Basin test can be used to back calculate the elastic moduli of individual pavement layers and subgrade. Several computational procedures are available to determine a set of modulus values that provide a best fit between the measured Deflection Basin and a computed Deflection Basin. Although not used, the Deflection Basin data were retained for possible future study.

NDT RESULTS

The nondestructive testing field data and temperature adjusted DSM's for each airport project are contained in Appendix A. To minimize the effects of nondestructive testing variance, each test was performed twice at each test location with the results averaged for the regression analysis. The average DSM and Deflection Basin results used for analysis are included in Appendix A.

As discussed, all nondestructive tests were performed prior to overlay construction, as close to the construction time as was practical, recognizing scheduling constraints. At Teterboro, nondestructive tests were performed on July 9, 1987, with the runway overlaid between July 13 to July 22, 1987. Ocean City was tested on May 11 and 12, 1987, with construction accomplished on May 13 and 14, 1987. Leesburg was tested on July 27, 1987, with the taxiway overlaid on August 4, 1987.

NUCLEAR DENSITY TESTING

Nuclear density tests were performed at NDT locations within one to two weeks after overlay construction. Test points

were carefully located to be as close as possible to the NDT locations.

At each site, nuclear density tests were performed with a Troxler 3411-B nuclear density device used in the backscatter mode. According to manufacturer's recommendations¹¹, backscatter tests were performed at the same locations both before and after overlay construction, to factor out the effects of the base pavement unit weight in measuring the unit weight of the relatively thin overlays. The density tests with the Troxler 3411-B were performed by averaging four 15-second tests, with the gauge rotated 90 degrees after each 15-second test, holding the probe in the same location.

At Teterboro, an independent set of nuclear tests were performed with the Troxler 4640 Thin Lift nuclear gauge, owned and operated by the Troxler Corporation. Thin Lift measurements were taken at the same locations as the 3411-B measurements. Although the Thin Lift gauge was also available at Ocean City and Leesburg, due to time constraints, only a limited amount of data were collected. Nuclear density data are included in Appendix B.

REGRESSION ANALYSIS

Since the FAA standard for asphalt density testing is by cores measured in accordance with ASTM 2726, several nuclear density tests were performed in close proximity to cores taken for normal project acceptance testing. A comparison of nuclear versus core unit weights is shown on Table 1. Regression analyses were conducted on the data from each project, based on the following:

1. Thin Lift data versus core data (Teterboro Only).
2. 3411-B data uncorrected for mat thickness versus core data.
3. 3411-B data corrected for mat thickness versus core data (Leesburg and Ocean City Only).

The linear regressions were performed using the gauge results as the independent variable and the core results as the dependent variable. The results of the analyses are summarized on Table 2.

From Tables contained in Reference 12, the significance of the correlation was examined, by comparing the probability (*P*) of obtaining a given *R* (correlation coefficient) for a given data set to accepted rules. A commonly used rule of thumb in interpreting values of *R* is to regard the correlation as significant if there is less than 1 chance in 20 (*P* = 0.05) that the value will occur by chance.

Thus, for Teterboro, a significant correlation (*P* < .001) between the Thin Lift results and cores was obtained. Essentially, the analysis indicates that at Teterboro, the Thin Lift results could be used without correction. Although the data bases were smaller, it should be noted that poorer correlations were obtained with the Thin Lift gauge at Ocean City and Leesburg.

At Leesburg, a significant correlation (*P* < .001) was obtained for the 3411-B gauge without the thickness correction suggested by the manufacturer. It should be noted

that the regression equation obtained at Leesburg was similar to that reported by Burati at Morristown¹³.

Correlations of lesser significance were obtained at Ocean City. This may be due to the smaller data base obtained at that airport.

Based on analysis of core versus nuclear densities, the following data were used at each project:

1. Teterboro Thin Lift gauge without correction.
2. Leesburg 3411-B gauge without thickness correction using the equation: Core Density = $50.63 + .634 * \text{Nuclear Density}$.
3. Ocean City 3411-B gauge without thickness correction using the equation: Core Density = $40.89 + .736 * \text{Nuclear Density}$.

MARSHALL TEST DATA

Since the FAA Eastern Region and National P-401 specifications require daily Marshall testing, normal Marshall acceptance test data were collected for each project. All samples for Marshall testing were selected by random sampling on a lot basis per FAA Eastern Region standards¹⁴, with a lot defined as one day's production. The data were used to compute percent Marshall density and in-place air voids at each nuclear test location for correlation with NDT DSM data. Marshall test data for each day's

production under study are contained in Appendix C, with the averages for each airport summarized on Table 3.

TABLE 1

CORRELATION ANALYSIS - NUCLEAR/CORES

A. TETERBORD RW 1-19

DATE	LOT	STA ft	OFFSET ft	NDT NO.	CORE NO.	DSN k/in	CORE	3411	THIN LIFT
							UNIT WT pcf	UNCORR	*****
7-13-87	7	31.00	43 L	73	RD-1	430	152.3	153.5	152.0
7-14-87	8	33.00	43 L	74	RD-3	488	148.8	151.0	148.9
		33.00	56 R	2	RD-2	429	148.9	153.9	148.6
		34.00	18 L	56	RD-5	466	151.0	152.7	151.2
		34.00	68 L	92	RD-4	1273	148.4	150.8	148.9
7-15-87	9	38.00	18 L	58	RD-6	781	151.5	155.6	150.2
		39.00	6.5 R	41	RD-7	826	154.3	160.4	153.5
		41.00	56 R	6	RD-8	1395	153.5	160.8	152.8
7-16-87	10	45.00	56 R	8	RD-9	521	149.8	153.6	150.3
		46.00	32 R	26	RD-10	401	149.6	153.5	150.2
		47.00	43 L	81	RD-11	444	152.3	155.3	151.6
7-20-87	12	55.00	43 L	85	RD-14	1663	155.1	157.6	155.4
		55.00	56 R	13	RD-12	1408	152.4	155.7	153.4
		55.00	6.5 R	49	RD-13	1941	154.5	158.1	154.9
7-21-87	13	56.00	18 L	67	RD-15	1309	151.8	156.4	153.5
		58.00	68 L	104	RD-16	1327	153.4	156.5	154.7
7-22-87	14	59.00	56 R	15	RD-17	802	152.1	153.3	150.6
		64.00	32 R	35	RD-19	706	151.8	153.5	152.4
					Avg		151.8	155.1	151.8

TABLE 1 (Continued)

B. LEESBURG TAXIWAY

CORES/THIN LIFT	DATE	LOT	STA ft	OFFSET ft	NDT NO.	CORE NO.	DSM k/in	CORE		3411		THIN LIFT	
								UNIT WT pcf	UNCORR *****	UNIT WT pcf	UNIT WT pcf	*****	*****
8-4-87	1	2.53	15L		C-1	374	159.3	162.7	155.5				
		6.07	5L		C-2	394	156.9	160.0	148.5				
		8.59	5R		C-3	245	157.0	160.1	151.2				
		13.50	15R	94	C-4	309	156.7	158.6	151.0				
		15.50	5R	68	C-5	363	157.7	163.1	152.9				
		5L			C-6	608	155.1	148.1					
		22.50	15L	12	C-7	470	156.9	158.6	154.8				
		26.09	5L		C-8	313	155.1	160.6	150.7				
		28.62	15L		C-9	579	152.0	154.9	145.7				
		29.62	5R		C-10	440	155.7	160.6	151.7				
		1.50	15R	88	C-11	441	156.4	160.4	151.6				
		7.62	15R		C-12	247	157.9	162.5	154.4				
							Avg	156.4	160.2	151.3			

TABLE 1 (Continued)

C. OCEAN CITY APRQN

						CORE	3411	THIN LIFT	
	DATE	LOT	STA	OFFSET	NDT	CORE NO.	DSH	UNIT WT pcf	UNIT WT pcf
CORES 3411	5-13-87	1	47.00	4 L	104	3-1	521	147.4	144.4
			42.50	5 R	138	3-2	311	147.4	143.7
			2.50	4 L	206	4-1	339	146.4	145.8
			46.75	95 R	15	4-2	392	148.5	145.7
			46.98	28 R	47	4-4	566	146.6	143.7
						5-2			146.6
						5-4	150.4	147.6	145.5
							Avg	147.8	145.2
									146.9

TABLE 2

**RESULTS OF REGRESSION ANALYSES ON
NUCLEAR GAUGE AND CORE MAT DENSITIES**

<u>Gauge</u>	<u>n</u>	<u>Thickness Correction</u>	<u>Slope</u>	<u>Intercept</u>	<u>R</u>	<u>P</u>
A. <u>Teterboro Project</u>						
Thin Lift	18	No	.870*	19.71*	.914	<.001
3411-B	17	No	.634	53.63	.411	.1
B. <u>Leesburg Project</u>						
3411-B	11	No	.664	50.17	.825	<.001
3411-B	11	Yes	.209	123.51	.754	.01
C. <u>Ocean City Project</u>						
3411-B	6	No	.736	40.89	.754	.08
3411-B	6	Yes	-.730	252.21	.817	.06

* By applying standard errors, slope is essentially 1 and intercept is essentially 0.

TABLE 3
MARSHALL TEST DATA SUMMARY

<u>Project</u>	<u>Gmb</u>	<u>Gmm</u>	<u>%AC</u>	<u>Stability (lbs)</u>	<u>Flow (.01 in)</u>	<u>Voids</u>	<u>Unit Wt (pcf)</u>
Teterboro	2.528	2.612	5.2	2303	10.9	3.2	157.7
Leesburg	2.605	2.677	5.3	2826	12.8	2.7	162.5
Ocean City	2.441	2.501	5.45	2215	11.1	2.4	152.3

Gmb = Bulk Specific Gravity of Marshall Specimen

Gmm = Maximum Theoretical Density of Mixture

%AC = Average Asphalt Content During Production

V. DATA ANALYSIS

The basic objective of this study was to investigate any inter-relationship between the stiffness of a base pavement and the compactibility of an asphalt overlay. As discussed, base pavement stiffness was characterized by the Dynamic Stiffness Modulus (DSM). Since the FAA Eastern Region and National P-401 specifications require different measures of density, for this study (i.e., in-place air voids and percent Marshall density, respectively), the results of contractor compaction efforts were defined as:

1. Percent Marshall Density
2. In-Place Air Voids
3. Field Unit Weight

Percent Marshall density was computed by dividing the nuclear gauge unit weight at each test location by the average laboratory Marshall unit weight (75 blow) for a particular production day. The in-place air voids were computed from the nuclear gauge unit weight (Gmb) at each test location and the average maximum unit weight for a particular production day using procedures detailed in Reference 14. As discussed in Section IV, the nuclear gauge unit weights listed are those obtained from calibration to cores using the Troxler 3411-B (Leesburg and Ocean City) and the Troxler Thin Lift gauge (Teterboro).

All data are organized for regression analysis on Tables D-1 through D-8 in Appendix D. Tables D-1 through D-4 are individual project and combined data bases using nuclear

gauge generated density data and Tables D-5 through D-8 contain core generated density.

REGRESSION ANALYSIS

Linear and parabolic regression analyses were performed on the data contained in Appendix D. For each case, the Dynamic Stiffness Modulus (DSM) was considered the independent variable (x) and percent Marshall density, in-place air voids, and mat unit weight considered dependent variables (y). In other words, for each airport an attempt was made to develop regression equations for:

1. Percent Marshall density as a function of DSM.
2. In-place air voids as a function of DSM.
3. Mat unit weight as a function of DSM.

Due to unit weight variances between projects, regression analyses were only performed for DSM versus percent Marshall density and in-place air voids for the combined data base.

The results of the analyses are summarized on Tables 4-7. In all cases, the parabola did not fit the data better than a straight line; therefore, only the linear regression equations are reported. For each analysis, the data are plotted on Figures 1-29 in Appendix D for the nuclear gauge data bases.

In reviewing Tables 4-7, the following observations are noted:

1. For the Teterboro project (Table 4), significant (i.e., $P < 0.05$) correlations between DSM and all "y" parameters (i.e., percent Marshall density, in-place air voids, and unit weight) were found. However, since the average percent Marshall density for the project, at 96.5%, is less than the FAA target average of 98.0%, the predictive equations may not be appropriate. This was found for regression analyses conducted on data bases using both the temperature corrected and uncorrected DSM results.
2. For the Leesburg (Table 13) and Ocean City (Table 14) projects, no correlations were found between DSM and either percent Marshall density, in-place air voids, or unit weight. The slope of the regression line in all cases was essentially zero. This was found for regression analyses conducted on data bases using both the temperature corrected and uncorrected DSM results.
3. Regression analyses on the combined data base for all projects also found no correlation between DSM results (both temperature corrected and uncorrected) and either percent Marshall density or in-place air voids.

4. In all cases, similar results from regression analyses were found using both nuclear and core generated density data.

CLASS GROUPINGS

In a second attempt to evaluate the data, the DSM results (uncorrected for temperature) for each project and the combined data base were sorted in ascending order, with corresponding percent Marshall density, in-place air voids, and unit weights. Class intervals of each hundred measure of DSM (i.e., 200, 300, 400, etc.) were chosen, and DSM (without temperature correction), percent Marshall density, in-place air voids and unit weights were statistically processed to yield the mean, standard deviation, and coefficient of variance of each parameter within each interval. The results for each project and the combined data base are included on Tables E-1 through E-4 in Appendix E.

As shown on the Tables, no trends are readily apparent either from comparison of averages or coefficients of variance of the data. In other words, the data suggest that under the conditions of this study, a stiffer support system (as characterized by the DSM), did not result in a higher degree of compaction. Further, variability in base pavement stiffness does not necessarily result in variability in compactibility.

DISCUSSION OF RESULTS

A broad range of DSM values (approximately 200 to 2,000 k/in.) was involved in the study, representing an approximate

10-fold increase in pavement support conditions. Thus, the range of the independent variable in the study should have been sufficient to detect any significant trends in the dependent variables.

However, analysis of the regression and class grouping results found no consistent correlation between base pavement stiffness and compactibility. Although statistically significant correlations were obtained at Teterboro for all parameters, the fact that the correlation coefficients improved for regression analyses on data using the temperature corrected DSM results may suggest that the correlations are less robust than suggested by the correlation coefficients.

With this background, analysis of the data collected during this study can broadly be interpreted in two ways:

1. Although base pavement support conditions may influence compaction of an asphalt overlay, the effect of the base pavement may be masked by numerous other variables discussed in Reference 2. This can mean that either the other variables (e.g., equipment, quality control, temperature, etc.) "overwhelmed" the effect of base pavement stiffness, or base pavement stiffness is not a significant variable in influencing compaction. In other words, if proper mix design and construction procedures are followed, base pavement stiffness (or lack thereof) may only then be observed to influence the compactibility of an asphalt mat.

2. Base pavement stiffness on airports designed according to FAA standards has little or no effect on the compactibility of an asphalt overlay.

In developing the research study, it was thought that concentrating the data collection to individual airports with the same contractors, mix, and equipment at each project, would represent a "real world" situation, yet reduce the effect of outside variables. However, the scope of the study did not allow detailed observation of construction, or analysis of mix properties, quality control, compaction temperatures, etc. The purpose was to collect appropriate data as objectively as possible for statistical analysis.

It should also be noted that the sensitivity of the measurement processes may also influence the ability to obtain correlations. In other words, if the variances associated with sampling and testing exceeds the actual material variance, then the data obtained by normal testing procedures would result in more randomness than may actually exist. While the NDT equipment and procedures utilized have proven to result in a high degree of repeatability (see Reference 8 and Appendix A), density data obtained by cores and with nuclear devices may not be as repeatable (see Reference 15 and Appendix B). This apparent randomness would be compounded by the fact that all dependent variables (i.e., percent Marshall, percent air-voids, and unit weight) would tend to cluster in a narrow range. Thus, large sampling and testing variances would tend to outweigh the actual material variability.

Therefore, without multi-variate analysis and a designed experiment to further eliminate the effect of other

variables, the results may be considered inconclusive. This is reinforced by the fact that statistically significant correlations were obtained at one (Teterboro) out of three projects. Interestingly, the Teterboro correlations were obtained at the airport with the best (i.e., stiffest) support conditions. This would again suggest that a correlation between base pavement stiffness and asphalt compaction may exist, but is difficult to quantify without elimination of other influencing variables, or simply base pavement stiffness is not a significant variable in influencing compactibility in all cases.

TABLE 4
RESULTS OF REGRESSION ANALYSES
TEREBORO PROJECT

$$Y = AX + B$$

<u>X</u>	<u>Y</u>	<u>n</u>	<u>Slope (a)</u>	<u>Intercept (b)</u>	<u>R</u>	<u>P</u>
A. Nuclear Gauge Data - DSM Not Temperature Corrected						
DSM	% Marshall	104	0.000011	0.955	0.252	0.01
DSM	% Air Voids	104	-0.00001	0.080	-0.308	<0.01
DSM	Unit Wt	104	0.00242	150.04	0.326	<0.01
B. Nuclear Gauge Data - Temperature Corrected DSM						
DSM	% Marshall	104	0.000009	0.954	0.291	0.01
DSM	% Air Voids	104	-0.00001	0.081	-0.354	<0.01
DSM	Unit Wt	104	0.00203	150.0	0.364	<0.01
C. Core Data - DSM Not Temperature Corrected						
DSM	% Marshall	18	0.000012	0.951	0.555	0.02
DSM	% Air Voids	18	-0.00001	0.085	0.598	0.01
DSM	Unit Wt	18	0.00246	149.49	0.598	0.01
D. Core Data - Temperature Corrected DSM						
DSM	% Marshall	18	0.000009	0.952	0.565	0.01
DSM	% Air Voids	18	-0.00001	0.084	-0.612	<0.01
DSM	Unit Wt	18	0.00195	149.59	0.612	<0.01

* Slope essentially zero by applying standard error.

	\bar{x}	y	\bar{a}	\bar{b}	\bar{R}	\bar{P}
A.	NuClear Gauge Data - DSM Not Temperature Corrected					
DSM	% Marshall	95	0.00001*	0.971	-0.122	>0.10
DSM	% Air Voids	95	0.000014*	0.056	0.113	>0.10
DSM	Unit Wt	95	-0.00238*	157.75	-0.113	>0.10
B.	NuClear Gauge Data - Temperature Corrected DSM					
DSM	% Marshall	95	-0.0	0.968	-0.066	>0.10
DSM	% Air Voids	95	0.000006*	0.058	0.066	>0.10
DSM	Unit Wt	95	0.00113*	157.38	-0.066	>0.10
C.	Core Data - DSM Not Temperature Corrected					
DSM	% Marshall	11	-0.00006*	0.989	-0.598	0.054
DSM	% Air Voids	11	0.000066*	0.038	0.598	0.054
DSM	Unit Wt	11	-0.01109*	160.72	-0.598	0.054
D.	Core Data - Temperature Corrected DSM					
DSM	% Marshall	11	-0.00005*	0.988	-0.540	0.09
DSM	% Air Voids	11	0.000052*	0.039	0.540	0.09
DSM	Unit Wt	11	-0.00874*	160.55	-0.540	0.09

RESULTS OF REGRESSION ANALYSES
LRESBURG PROJECT

TABLE 5

TABLE 6
RESULTS OF REGRESSION ANALYSES
OCEAN CITY PROJECT

$$Y = AX + B$$

<u>X</u>	<u>Y</u>	<u>n</u>	<u>Slope (a)</u>	<u>Intercept (b)</u>	<u>R</u>	<u>P</u>
A. Nuclear Gauge Data - Apron Overlay - DSM Not Temperature Corrected						
DSM	% Marshall	79	-0.0	0.969	-0.048	>0.10
DSM	% Air Voids	79	0.000002*	0.0578	0.0518	>0.10
DSM	Unit Wt	79	-0.00001*	147.09	-0.051	>0.10
B. Core Data - Apron Overlay and Taxiway Extension - DSM Not Temperature Corrected						
DSM	% Marshall	5	-0.0	0.974	-0.168	>0.10
DSM	% Air Voids	5	0.000007*	0.053	0.168	>0.10
DSM	Unit Wt	5	-0.00123*	147.79	-0.160	>0.10
C. Nuclear Gauge Data - Taxiway Extension - DSM Not Temperature Corrected						
DSM	% Marshall	41	0.00002*	0.960	0.244	>0.10
DSM	% Air Voids	41	-0.00001*	0.067	-0.244	>0.10
DSM	Unit Wt	41	0.003104*	145.62	0.244	>0.10
D. Nuclear Gauge Data - Taxiway Extension - Temperature Corrected DSM						
DSM	% Marshall	41	0.000014	0.960	0.244	>0.10
DSM	% Air Voids	41	-0.00001*	0.067	-0.244	>0.10
DSM	Unit Wt	41	0.002171	145.62	0.244	>0.10

* Slope essentially zero by applying standard error.

TABLE 7

**RESULTS OF REGRESSION ANALYSES
COMBINED DATA BASE**

$$Y = AX + B$$

<u>X</u>	<u>Y</u>	<u>n</u>	<u>Slope (a)</u>	<u>Intercept (b)</u>	<u>R</u>	<u>P</u>
A. Nuclear Gauge Data - DSM Not Temperature Corrected						
DSM	% Marshall	319	0.0	0.969	0.024	>0.10
DSM	% Air Voids	319	0.000004	0.050	0.111	0.05
B. Nuclear Gauge Data - Temperature Corrected DSM						
DSM	% Marshall	199	0.000003*	0.962	0.118	>0.05
DSM	% Air Voids	199	0.0	0.064	0.022	>0.10
C. Core Data - DSM Not Temperature Corrected						
DSM	% Marshall	29	0.000006*	0.958	0.286	>0.10
DSM	% Air Voids	29	-0.0	0.071	-0.164	>0.10
D. Core Data - Temperature Corrected DSM						
DSM	% Marshall	29	0.000005*	0.958	0.311	>0.10
DSM	% Air Voids	29	-0.0	0.071	-0.199	>0.10

* Slope essentially zero by applying standard error.

VI. COMPACTION STANDARDS

At the outset of the project, it was recognized that there were differences in density testing requirements between the FAA National¹ and Eastern Region⁷ P-401 specifications. Although the research study required evaluating correlations based on both percent Marshall density (National requirement) and in-place air voids (Eastern Region requirement), it was thought that the two requirements were essentially different measurements of the same standard. However, in evaluating the density data collected at the airports, it appears that the two specification requirements, or application of the two statistical acceptance plans, may be resulting in different density standards.

In the way of background, the National P-401 specification defines compaction in terms of a percentage of the 75 blow Marshall density. A target (i.e., average) density of 98% was established with substantial compliance (i.e., full payment) defined as 90% of the material in a lot having a density greater than 96.7%. The lower tolerance limit of 96.7% was established by working back from the target density at an assumed standard deviation of 1%. The 1% standard deviation for percent Marshall density was confirmed in this study from test results from both nuclear devices and cores (Tables D-4 and D-8). Marshall voids are specified to fall between 3.0% to 5.0%.

On the other hand, the Eastern Region P-401 specification defines compaction in terms of in-place air voids. Although no target density is specified, substantial compliance is defined as 90% of the material falling within lower and upper tolerance limits of between 1.0% to 7.0%. Marshall voids are

specified to fall within lower and upper limits of from 1.0% to 5.0%.

In equating the two requirements, one can take the percent Marshall target density and the mid-range Marshall air voids for the National specification, and compare these to the mid-range of in-place and Marshall air voids for the Eastern Region specification. Based on the National requirements, this would result in an average in-place air voids, at the assumed one percent standard deviation, of approximately 6.0%, compared to an average in-place air voids content of 4.0% with the Eastern Region specification. With a mid-range Marshall air voids content of 3.0% required by the Eastern Region, approximately 99% Marshall density would be needed to achieve the mid-range requirement of 4.0%.

Further, in applying the upper limits of both criteria to obtain full acceptance, the National specification will allow a maximum average in-place air voids content of 7.0% (5.0% Marshall laboratory voids plus 2.0% from 98% compaction). Applying the Eastern Region's acceptance criteria, the maximum allowable air voids for full payment (i.e., 90 percent within limits) is approximately 5.7%, assuming a 1.0% standard deviation for in-place air voids. Applying the acceptance criteria for laboratory Marshall air voids, an acceptable average Marshall voids content to meet 90% within limits would be 2.2%, at a 1.0% standard deviation. Using the 0.6% standard deviation for Marshall air voids suggested in the Eastern Region specification would result in a minimum acceptable void content of approximately 1.7% at 90% within limits. Therefore, translating to percent Marshall density, the Eastern Region specification would allow full payment with an average percent Marshall density from compaction of approximately 95.9% to 96.4%, depending on the choice of standard deviation. For convenience, if 2.0% is considered a

minimum practical average for Marshall air voids, a minimum average required Marshall density from compaction of 96.3% would be required to meet the upper limit 5.7% in-place air voids for full payment.

Comparison of the criteria from each specification is summarized on Table 8.

Therefore, in applying the extreme limits of the acceptance criteria from both specifications, it appears that the two specifications may have different criteria for defining acceptable material. Although not an exact match, the acceptance data summarized on Table 9 also suggest some inconsistency between the two specification requirements.

Further, applying the payment schedule formulas from each specification would result in different contractor payments from each specification. Assuming a normal distribution for the combined data collected during the study (Table 9), the percent of material within specification limits would be less than 50% under the National specification, versus approximately 77% of material within limits (PWL) with the Eastern Region specification. This would result in 50% payment under the National specification versus 94% payment under the Eastern Region specification for the same material.

The problem can be further compounded with the Eastern Region specification if the Marshall air voids criteria are not rigidly enforced. For example, it would be advantageous for a contractor to design a mix with low laboratory voids so as to decrease the amount of compactive effort required to achieve the required in-place air voids for full payment. If the asphalt content is kept low and the voids are filled with bag house fines or mineral filler, a durability problem may result from improper coating.

Based on the above discussion, it appears that both specification requirements should be re-evaluated to assure consistency and establishment of an appropriate, acceptable quality level.

TABLE 8
COMPARISON OF COMPACTION STANDARDS

<u>Spec</u>	Mid-Range Marshall Air <u>Voids</u>	Mid-Range Percent Marshall <u>Density</u>	Mid-Range In-Place Place Air <u>Voids</u>	Minimum Average Marshall <u>Density</u>	Maximum In-Place Air <u>Voids</u>
National	4%	98%	6%	98%	7%
Eastern Region	3%	99%	4%	96.3%	5.7%

TABLE 9
**SUMMARY OF COMBINED DATA BASE RESULTS
(NUCLEAR DEVICE)**

	Average Marshall Air <u>Voids</u>	Average In-Place Air <u>Voids</u>	Stand. <u>Dev.</u>	Average Percent Marshall <u>Density</u>	Stand. <u>Dev.</u>	Percent Asphalt <u>Content</u>
Nuclear Device	2.8%	6.2%	1.1%	96.6%	1.0%	5.3%

VII. SUMMARY AND CONCLUSIONS

This report has summarized the results of a research project to investigate the inter-relationship between the stiffness of a base pavement and the compactibility of an asphalt overlay. The stiffness of the base pavement was defined in terms of the Dynamic Stiffness Modulus (DSM) as defined in References 5 and 6. Asphalt compaction was defined in terms of percent Marshall density as required by the National P-401 specification¹ and in terms of in-place air voids as required by the Eastern Region P-401 specification⁷.

The DSM was determined by nondestructive testing^{5,6,10} on the base pavement prior to overlay. Field densities of the subsequent overlay for computation of percent Marshall density and in-place air voids were determined using a nuclear density device. To assure consistency with both National and Eastern Region test procedures¹⁴, nuclear density readings were corrected using regression analysis on companion nuclear and core densities determined at the same locations.

Field data acquisition was accomplished at three airports in FAA's Eastern Region (Teterboro, New Jersey, Leesburg, Virginia, and Ocean City, Maryland). Linear and nonlinear regression analyses were performed on the three data bases, and on the combined data base from the three projects, to determine whether significant correlations exist between DSM and percent Marshall density, in-place air voids, and mat unit weight (only for the three individual projects). The data were also grouped into DSM class intervals to further investigate potential correlations by comparing average DSM's for a particular interval with average percent Marshall and in-place air voids. Coefficients of variance for each

parameter were also computed and compared to detect whether variability in pavement support will affect compactibility.

Finally, since the National and Eastern Region P-401 specifications utilize different criteria for density acceptance (i.e., percent Marshall density for the National specification and in-place air voids for the Eastern Region), the compatibility of each compaction standard was examined, in terms of consistency in acceptance and payment, and in defining acceptable quality levels for mat density.

Based on the results generated in this study, the following conclusions are offered:

1. A significant correlation between unit weight determined by the Troxler 3411-B nuclear density device and that determined from cores was established at the Leesburg Airport similar to that reported in Reference 13.
2. The Troxler 4640 Thin Lift nuclear gauge densities correlated with core densities at Teterboro without correction. However, poor correlations were obtained at the Leesburg and Ocean City projects.
3. Based on the compaction data obtained at the three study airports, a 1.0% standard deviation was found for percent Marshall density from both core and nuclear devices, and a 1.1% standard deviation was found for in-place air voids with the nuclear devices, with a 1.2% standard deviation from cores.

4. For the Teterboro project (Table 4), significant (i.e., $P < 0.05$) correlations between DSM and all "x" parameters (i.e., percent Marshall density, in-place air voids, and unit weight) were found. However, since the average percent Marshall density for the project, at 96.5% is less than FAA's target average of 98.0%, the predictive equations may not be appropriate.
5. For the Leesburg (Table 5) and Ocean City (Table 6) projects, no correlations were found between DSM and either percent Marshall density, in-place air voids, or unit weight. The slope of the regression line in all cases was essentially zero.
6. Regression analyses on the combined data base for all projects (Table 7) also found no correlation between either percent Marshall density or in-place air voids.
7. Similar results for each project and the combined data bases were found using both nuclear and core density data, and using both temperature corrected and uncorrected DSM results.
8. In grouping the data in class intervals as a function of DSM (Appendix E), no trends are readily apparent either from comparison of averages or coefficients of

variance of the data bases. This suggests that under the conditions of the study, a stiffer support system does not necessarily result in a higher degree of asphalt compaction.

9. Based on analysis of all data for this project, base pavement stiffness appears to have no consistent effect on asphalt compactibility. This can be interpreted either as other outside variables (e.g., equipment, mix characteristics, temperature, quality control, etc.) masked the effect of base pavement stiffness, or simply, base pavement stiffness is not a significant variable in influencing compaction.
10. Aside from construction related variables, the sensitivity of the measurement processes may influence the apparent randomness of the data. This may be particularly significant for the dependent variables used for regression analyses, if large sampling and testing variances "overwhelmed" the actual material variance.
11. It is possible that existing support conditions at airports designed to FAA standards are too stiff to reveal any loss in compactibility due to weak or yielding base pavements. Conversely, under present FAA base pavement requirements, the effect of yielding

support conditions on compactibility may never be revealed.

12. Evaluation of acceptance procedures for mat density required by the National and Eastern Region P-401 specifications suggest that the specifications may be inconsistent in requiring different acceptable quality levels, resulting in different contractor payments for the same material.

VIII. RECOMMENDATIONS

While the study provided useful information, the data did not conclusively prove the existence or nonexistence of a robust correlation between base pavement stiffness and asphalt compactibility.

While the data obtained at one project did suggest that the compactibility of an asphalt overlay can be influenced by base pavement support conditions, no correlations were obtained at the other two projects. As stated, this may suggest that either stiffness is not a significant variable, or that the conditions associated with data collection resulted in the effect of stiffness being masked by other influencing variables. This indicates that investigation of the inter-relationship between stiffness and compaction will require data acquisition under a more controlled environment.

However, the study did provide additional useful information on the use of nuclear density devices for acceptance or quality control testing during asphalt overlay construction. The correlation obtained between nuclear and core unit weights was similar to that reported in Reference 13 for the Troxler 3411-B gauge, and the newly introduced Thin Lift nuclear gauge shows promise for future use in quality control and acceptance testing.

Further, the study did suggest that apparent inconsistencies may exist between the density acceptance procedures required by the National and Eastern Region P-401 specifications. This can result in different acceptance decisions and payment for material of equal quality depending on which specification is applied.

Additional research efforts may provide more definitive data on quantifying the inter-relationships between base pavement stiffness and asphalt compaction, as well as possible refinement of either National or Eastern Region density acceptance procedures to assure consistency between each procedure.

Based on the above, the following recommendations are offered:

1. Due to the good correlation between unit weights obtained by the Troxler Thin Lift nuclear gauge and core weights at Teterboro, the use of the Thin Lift gauge as an acceptance or quality control tool should be further researched. If this gauge proves to be more precise and repeatable than other gauges¹⁵, yielding results consistent with core densities, then use of the nuclear gauge would enable a greater number of acceptance tests to be performed at little or no additional cost. This would increase the reliability of the acceptance procedures (currently at n = 4) for mat density, by yielding a larger data base for decision making.
2. To research the inter-relationship between base pavement stiffness and asphalt compaction, the effects of extraneous variables should be eliminated. This can be accomplished by construction of several test strips,

using the same material, contractor, construction equipment, and quality control procedures. It is recommended that the test strips be constructed on three subgrades with different elastic moduli, or CBR (i.e., weak, average and stiff), with two different pavement structures (i.e., thin pavement with granular base, and thicker pavement on stabilized base) constructed on each subgrade. All overlay construction should be accomplished during the same day under the same temperature conditions. All overlays should be constructed using the same equipment, personnel, material from the same plant, and under close supervision to minimize the effects of other variables as much as possible. Data obtained for regression analyses should be based on repeat testing to minimize test variance to better isolate actual material variance.

3. The basis for the National and Eastern Region acceptance plans should be re-evaluated to define a consistent acceptable quality level and basis of payment for materials of the same quality. The study may also consist of re-evaluation of the basic characteristics necessary for durable asphalt pavement construction, and for identification of acceptance characteristics and associated acceptable quality levels.

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APPENDIX A

NDT RESULTS

TABLE A-1
TETERBORO - NDT DATA

TETERBORO

NDT	STATION	OFFSET	F1	D1 (0)	D2(18)	D3(36)	D4(48)	S1	F2	D1 (0)	D2(18)	D3(36)	D4(48)	S2	TCF	DSM	DSM TC	
No.		ft	kip	mil	mil	mil	mil	k/mil	kip	mil	mil	mil	mil	k/mil	kip/in	kip/in		
1	31.00	56 R	5.03	4.80	3.14	1.78	1.22	1.05	6.99	7.15	4.83	2.65	1.76	0.98	1.18	836	986	
2	33.00	56 R	4.97	8.03	5.17	2.34	1.27	0.62	7.01	12.78	8.17	3.70	2.01	0.55	1.18	429	507	
3	35.00	56 R	5.00	4.79	3.36	2.12	1.48	1.04	7.01	7.17	5.03	3.25	2.22	0.98	1.18	846	999	
4	37.15	56 R	5.03	4.19	3.05	1.91	1.34	1.20	6.99	6.22	4.26	2.82	2.00	1.12	1.18	966	1139	
5	39.00	56 R	4.98	4.50	3.15	1.88	1.29	1.11	7.02	6.79	4.73	2.83	1.92	1.03	1.18	891	1051	
6	41.00	56 R	5.01	3.23	2.42	1.62	1.20	1.55	6.97	4.64	3.41	2.25	1.67	1.50	1.18	1395	1646	
7	43.00	56 R	5.00	3.45	2.45	1.51	1.08	1.45	6.97	5.06	3.48	2.16	1.55	1.38	1.18	1224	1444	
8	45.00	56 R	4.97	6.95	4.57	2.12	1.26	0.72	7.04	10.92	6.87	3.26	1.89	0.64	1.18	521	615	
9	47.00	56 R	5.02	4.06	2.83	1.67	1.19	1.24	6.94	5.87	4.05	2.42	1.72	1.18	1.18	1058	1248	
10	49.00	56 R	4.99	4.89	3.41	2.16	1.55	1.02	6.98	7.21	5.18	3.16	2.27	0.97	1.25	858	1072	
11	51.00	56 R	4.96	6.15	4.24	2.44	1.83	0.81	6.99	9.42	6.72	4.14	2.86	0.74	1.27	621	789	
12	53.00	56 R	5.01	4.01	4.08	2.75	1.59	1.08	1.23	7.02	6.14	3.93	2.21	1.55	1.14	1.27	978	1242
13	55.00	56 R	5.03	3.09	2.28	1.64	1.34	1.63	7.00	4.49	3.25	2.30	1.90	1.56	1.27	1408	1788	
14	57.00	56 R	4.96	3.93	2.98	2.04	1.56	1.26	6.98	5.75	4.12	2.83	2.24	1.21	1.27	1110	1409	
15	59.00	56 R	4.96	4.60	4.10	2.93	2.35	0.89	7.00	8.14	6.07	4.23	3.36	0.86	1.27	802	1018	
16	61.00	56 R	4.99	6.44	4.63	3.05	2.37	0.78	7.00	9.73	6.73	4.41	3.42	0.72	1.27	612	777	
17	63.00	56 R	5.00	5.99	4.03	2.26	1.59	0.84	6.97	8.96	6.14	3.38	2.30	0.78	1.27	663	862	
18	65.00	56 R	4.98	4.97	3.13	1.68	1.14	1.00	7.00	7.53	4.66	2.40	1.63	0.93	1.27	788	1000	
19	32.00	32 R	4.98	6.90	4.48	2.31	1.45	0.72	6.96	10.73	6.82	3.56	2.20	0.65	1.25	517	647	
20	34.00	32 R	5.00	6.05	3.75	1.77	1.06	0.83	7.02	9.49	6.03	2.83	1.59	0.74	1.25	587	734	
21	36.00	32 R	4.97	5.19	3.50	1.86	1.17	0.96	7.00	8.00	5.30	2.74	1.74	0.88	1.25	722	902	
22	38.00	32 R	5.01	5.49	3.68	2.08	1.38	0.91	6.98	8.30	5.63	3.24	2.09	0.84	1.25	701	876	
23	40.00	32 R	5.01	6.80	4.62	2.47	1.62	0.74	6.95	10.26	6.92	3.72	2.45	0.68	1.25	562	702	
24	42.00	32 R	5.01	4.62	3.09	1.78	1.17	0.79	7.00	6.92	4.26	2.56	1.70	1.01	1.25	865	1082	
25	44.00	32 R	4.98	6.30	3.95	1.74	1.03	0.79	6.99	9.50	6.06	2.69	1.52	0.74	1.25	629	786	
26	46.00	32 R	4.97	8.52	5.19	2.15	1.27	0.58	7.03	13.66	8.23	3.28	1.90	0.51	1.25	401	501	
27	48.00	32 R	5.00	4.65	2.84	1.39	0.89	1.08	7.00	7.10	4.33	2.08	1.31	0.99	1.25	816	1021	
28	50.00	32 R	5.01	4.01	2.66	1.38	0.95	1.15	6.97	6.66	4.07	2.03	1.33	1.05	1.25	858	1184	
29	52.00	32 R	4.99	4.56	2.33	1.27	0.91	1.10	6.98	6.84	3.50	1.90	1.34	1.02	1.25	865	1229	
30	54.00	32 R	5.02	4.29	2.54	1.57	1.14	1.07	7.01	6.48	3.92	2.30	1.67	1.08	1.25	907	1287	
31	56.00	32 R	5.00	3.72	2.39	1.56	1.22	1.35	6.95	5.43	3.56	2.31	1.76	1.28	1.25	1137	1615	
32	58.00	32 R	4.99	4.21	2.84	1.92	1.57	1.19	7.02	6.25	4.23	2.76	2.20	1.12	1.42	675	958	
33	60.00	32 R	4.96	6.34	4.42	2.10	0.78	6.99	9.35	6.52	4.03	2.10	0.75	1.42	658	934		
34	62.00	32 R	5.00	5.77	3.69	2.18	1.64	0.87	7.01	8.82	5.67	3.24	2.41	0.79	1.42	706	1003	
35	64.00	32 R	4.99	5.69	3.54	1.97	1.43	0.88	7.00	8.54	5.46	3.01	2.07	0.82	1.42	868	1085	
36	31.00	6.5 R	4.96	4.43	2.94	1.41	1.12	6.96	6.73	4.58	2.49	1.70	1.03	1.25	761	951		
37	33.00	6.5 R	5.01	4.87	3.30	1.86	1.25	1.03	7.03	7.52	5.26	3.03	1.95	0.93	1.25	732	914	
38	35.00	6.5 R	4.97	5.14	3.28	1.77	1.18	0.97	7.00	7.91	5.04	2.73	1.79	0.88	1.25	952	1190	
39	37.15	6.5 R	5.00	4.15	2.69	1.55	1.05	1.20	6.96	6.21	4.07	2.39	1.56	1.12	1.25	826	1032	
40	39.00	6.5 R	4.96	4.50	2.98	1.76	1.23	1.10	6.95	6.91	4.66	2.66	2.00	1.01	1.25	886	1107	
41	41.00	6.5 R	4.99	4.40	3.08	1.95	1.38	1.13	7.01	6.68	4.61	2.92	2.10	1.05	1.25	974	1217	
42	43.00	6.5 R	4.97	3.96	2.69	1.61	1.26	1.02	6.06	3.96	2.36	1.71	1.16	1.25	1.25	897	1121	
43	45.00	6.5 R	5.00	4.36	2.88	1.67	1.15	1.15	6.99	6.58	4.55	2.65	2.05	1.06	1.25	743	956	
44	47.00	6.5 R	5.01	4.98	3.80	1.86	1.19	0.84	7.03	9.38	5.98	2.86	1.83	0.75	1.25	936	1283	
45	49.00	6.5 R	4.99	4.00	2.56	1.44	0.99	1.25	6.97	6.12	3.23	2.21	1.46	1.37	1.41	1238	1745	
46	51.00	6.5 R	5.00	3.17	2.06	1.30	0.97	1.58	6.98	4.77	3.11	1.98	1.44	1.41	1.41	1193	1682	
47	53.00	6.5 R	4.99	3.39	2.10	1.32	0.99	1.47	7.03	5.10	3.20	2.00	1.47	1.38	1.41			

Table A-1 (Cont'd)

TEREBORO

NDT NO.	STATION	OFFSET	F1	D1 (0)	D2(18)	D3(36)	S1	F2	D1 (0)	D2(18)	D3(36)	S2	TCF	DSM	DSM	TC	
			kip	ft	mil	mil	k/mil		kip	mil	mil	k/mil	kip/in	kip/in	kip/in	kip/in	
49	55.00	6.5 R	5.01	2.32	1.55	1.17	1.02	2.16	6.96	2.20	1.68	1.42	2.10	1.41	1941	2737	
50	57.00	6.5 R	5.03	3.56	2.47	1.68	1.35	2.14	7.03	5.41	3.76	2.54	2.10	1.41	1083	1527	
51	59.00	6.5 R	5.00	4.31	2.95	2.07	1.78	1.16	7.01	6.39	4.41	3.06	2.57	1.10	1.41	969	1366
52	61.00	6.5 R	4.99	4.65	3.19	2.21	1.79	1.07	6.96	4.65	3.17	2.56	1.01	1.45	868	1259	
53	63.00	6.5 R	4.97	4.71	2.82	1.60	1.24	1.06	7.01	7.41	4.37	2.53	1.90	0.95	1.45	757	1097
54	65.00	6.5 R	4.99	4.79	2.72	1.42	1.08	1.04	6.99	7.54	4.26	2.21	1.60	0.93	1.45	727	1055
55	52.00	18 L	5.01	5.93	3.76	1.83	1.13	0.85	6.98	8.81	5.64	2.83	1.69	0.79	1.16	684	794
56	36.00	18 L	5.04	7.00	4.32	1.92	1.21	0.72	7.01	11.23	7.00	3.05	1.89	0.62	1.16	466	541
57	36.00	18 L	4.98	5.50	3.48	1.71	1.05	0.91	7.01	8.62	5.40	2.68	1.58	0.81	1.16	651	755
58	38.00	18 L	5.03	4.84	3.08	1.74	1.18	1.04	6.96	7.31	4.68	2.54	1.72	0.95	1.16	781	906
59	40.00	18 L	5.04	5.31	3.59	2.17	1.50	0.95	7.00	7.90	5.46	3.37	2.29	0.89	1.16	755	876
60	42.00	18 L	4.97	4.24	2.84	1.70	1.16	1.17	6.99	6.42	4.28	2.60	1.79	1.09	1.09	929	1013
61	44.00	18 L	4.97	4.27	2.77	1.56	1.05	1.16	7.00	6.53	4.04	2.28	1.51	1.07	0.99	898	979
62	46.00	18 L	5.01	5.93	3.88	2.08	1.34	0.85	6.96	8.97	5.83	3.13	1.96	0.78	1.09	640	698
63	48.00	18 L	5.01	3.85	2.36	1.21	0.85	1.30	7.00	6.00	3.59	1.76	1.18	1.17	1.11	926	1028
64	50.00	18 L	5.01	3.96	2.28	1.19	0.88	1.27	7.02	6.33	3.56	1.72	1.26	1.11	1.11	848	941
65	52.00	18 L	4.98	3.74	2.27	1.20	0.89	1.33	7.06	5.92	3.62	1.76	1.30	1.19	1.12	956	1071
66	54.00	18 L	4.97	3.53	2.16	1.28	0.99	1.41	7.00	5.45	3.25	1.92	1.42	1.29	1.12	1057	1184
67	56.00	18 L	4.97	3.27	2.33	1.61	1.33	1.52	6.98	4.81	3.42	2.31	1.85	1.45	1.12	1309	1467
68	58.00	18 L	5.04	3.46	2.25	1.41	1.11	1.46	7.01	5.13	3.40	2.09	1.60	1.37	1.12	1183	1325
69	60.00	18 L	6.36	4.41	2.85	2.23	0.79	0.79	6.98	9.48	6.63	4.24	3.24	0.74	1.12	637	713
70	62.00	18 L	4.98	5.03	3.29	1.90	1.45	0.99	6.94	7.81	5.13	2.94	2.17	0.89	1.12	705	790
71	64.00	18 L	4.97	4.71	3.09	1.76	1.29	1.06	7.02	7.31	4.69	2.71	1.99	0.96	1.12	787	881
72	31.00	43 L	5.00	7.67	5.00	1.97	1.15	0.65	6.96	12.23	8.02	3.04	1.71	0.57	1.10	430	473
73	33.00	43 L	5.00	6.94	4.99	3.33	2.02	1.22	7.02	11.04	6.73	3.09	1.83	0.63	1.10	488	537
74	35.00	43 L	5.02	5.82	4.00	2.06	1.22	0.86	6.97	8.69	5.86	2.97	1.82	0.80	1.10	689	758
75	37.15	43 L	5.02	7.04	4.56	2.25	1.35	0.71	6.98	10.74	6.95	3.49	2.09	0.65	1.10	530	583
76	39.00	43 L	5.01	5.97	3.92	1.99	1.25	0.86	6.95	8.99	5.97	2.98	1.83	0.77	1.10	643	708
77	41.00	43 L	5.02	5.10	3.41	1.92	1.29	0.99	6.98	7.61	5.08	2.83	1.90	0.92	1.10	781	859
78	43.00	43 L	5.00	5.32	3.53	1.86	1.19	0.94	6.99	8.10	5.32	2.86	1.83	0.86	1.10	716	787
79	45.00	43 L	5.01	5.94	3.68	2.01	1.38	0.84	6.99	9.10	5.69	3.09	2.03	0.77	1.10	627	690
80	47.00	43 L	5.00	8.14	4.89	1.98	1.10	0.61	6.97	12.58	7.19	2.89	1.61	0.55	1.10	444	489
81	49.00	43 L	4.98	5.89	3.67	1.80	0.99	0.85	6.96	9.32	5.79	2.69	1.55	0.75	1.12	577	647
82	51.00	43 L	4.97	3.96	2.67	1.64	1.20	1.26	7.03	6.07	3.91	2.37	1.73	1.13	976	1103	
83	53.00	43 L	4.97	4.67	2.73	1.40	1.02	1.06	6.94	6.90	4.05	2.00	1.46	1.01	1.13	883	998
84	55.00	43 L	4.97	2.68	1.92	1.37	1.18	1.86	6.99	3.89	2.79	1.93	1.63	1.80	1.13	1663	1879
85	57.00	43 L	4.98	3.73	2.68	1.75	1.36	1.34	6.98	5.50	3.86	2.52	1.98	1.27	1.13	1130	1277
86	59.00	43 L	4.99	4.19	2.89	1.89	1.52	1.19	6.99	6.27	4.33	2.77	2.18	1.11	1.13	961	1086
87	61.00	43 L	4.99	6.13	4.25	2.62	1.92	0.81	6.98	9.33	6.45	3.92	2.83	0.75	1.14	622	709
88	63.00	43 L	4.96	5.03	3.20	1.79	1.31	0.99	6.95	7.61	4.70	2.59	1.92	0.91	1.14	772	880
89	65.00	43 L	5.10	4.49	3.18	1.76	1.28	0.98	6.98	7.67	4.81	2.63	1.85	0.91	1.14	772	880
90	67.00	43 L	4.97	4.97	3.02	1.79	1.21	1.11	6.96	6.65	3.57	2.26	1.83	1.05	1.11	921	1023
91	69.00	43 L	5.00	3.38	2.39	1.40	1.01	1.48	6.98	4.96	3.48	2.13	1.47	1.41	1.11	1273	1413
92	71.00	43 L	4.98	6.08	3.93	2.77	1.66	1.16	1.27	6.98	5.81	3.96	2.41	1.70	1.20	1181	1253
93	73.00	43 L	5.01	3.69	2.64	1.71	1.27	1.36	7.03	5.48	3.93	2.47	1.78	1.28	1.11	1129	1253
94	75.00	43 L	4.96	4.30	2.93	1.72	1.15	1.22	1.27	6.90	4.40	2.56	1.76	1.09	1.11	974	1081
95	77.00	43 L	4.96	4.35	2.87	1.58	1.11	1.11	1.15	7.01	6.61	4.23	2.26	1.55	1.06	883	980

Table A-1 (Cont'd.)

TETERBORO

HDT NO.	STATION ft	OFFSET ft	F1	D1 (0)	D2(18)	D3(36)	D4(48)	S1	F2	D1 (0)	D2(18)	D3(36)	D4(48)	S2	TCF	DSM	DSM	TC
			kip	mil	mil	mil	mil	k/mil	kip	mil	mil	mil	mil	k/mil	kip/in			
97	44.00	68 L	4.99	5.39	3.56	1.84	1.16	0.93	7.04	8.23	5.27	2.77	1.70	0.86	1.11	723	803	
98	46.00	68 L	4.98	4.57	2.93	1.64	1.11	1.09	6.94	6.69	4.31	2.40	1.60	1.04	1.11	927	1029	
99	48.00	68 L	5.00	4.55	2.84	1.50	0.97	1.10	7.03	6.86	4.34	2.20	1.44	1.02	1.11	877	973	
100	50.00	68 L	4.97	5.09	3.25	1.73	1.18	0.98	6.99	7.92	4.88	2.55	1.70	0.88	1.13	714	806	
101	52.00	68 L	5.02	4.52	2.99	1.71	1.23	1.11	7.04	6.87	4.65	2.56	1.78	1.02	1.14	860	980	
102	54.00	68 L	4.99	4.00	2.61	1.57	1.15	1.25	6.97	5.93	3.83	2.29	1.68	1.18	1.14	1026	1170	
103	56.00	68 L	5.01	3.64	2.59	1.73	1.33	1.38	6.94	5.13	3.62	2.42	1.85	1.35	1.14	1291	1472	
104	58.00	68 L	4.98	3.38	2.37	1.55	1.21	1.48	6.99	4.89	3.45	2.26	1.71	1.43	1.14	1327	1512	
105	60.00	68 L	4.99	4.87	3.16	1.82	1.36	1.02	6.99	7.28	5.14	2.75	1.99	0.96	1.14	830	946	
106	62.00	68 L	5.01	6.52	3.44	1.86	1.30	0.77	7.01	9.86	5.01	2.65	1.85	0.71	1.14	599	683	

TABLE A-2
LEESBURG - NDT DATA

LEESBURG

Table K-2 (Cont'd.)

LEESBURG

MDT	STATION No.	OFFSET ft	F1 kip	D1 (0) mil	D2(18) mil	D3(30) mil	D4(42) mil	S1 k/mil	F2 kip	D1 (0) mil	D2(18) mil	D3(30) mil	D4(42) mil	S2 k/mil	TCF	DSM kip/in	DSM TC kip/in	
55	2.50	5R	0.04	0.12	0.46	0.40	0.46	0.05	0.54	0.68	0.62	0.62	0.62	0.54	0.45	0.15	0.125	518
56	3.50	5R	0.36	0.52	2.75	2.70	2.95	0.47	1.11	1.98	1.64	1.64	1.64	1.53	1.53	0.15	0.125	520
57	4.50	5R	5.01	5.00	5.01	5.00	5.00	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.15	394	
58	5.50	5R	4.98	4.99	9.17	3.64	0.47	0.09	0.54	6.97	15.65	5.93	5.93	5.93	5.93	0.09	0.125	491
59	6.50	5R	4.99	4.98	9.90	3.99	0.85	0.39	0.50	7.00	16.30	6.27	6.27	6.27	6.27	0.20	0.125	382
60	7.50	5R	4.98	4.97	11.88	4.95	1.09	0.22	0.42	6.96	20.00	8.10	8.10	8.10	8.10	0.43	0.125	395
61	8.50	5R	4.99	4.99	9.67	3.89	0.83	0.15	0.52	7.02	16.55	6.70	6.70	6.70	6.70	0.23	0.125	306
62	9.50	5R	4.97	4.97	9.51	3.38	1.28	0.29	0.52	7.03	16.14	7.36	7.36	7.36	7.36	0.42	0.125	369
63	10.50	5R	5.00	5.00	7.50	2.95	0.50	0.04	0.67	7.03	12.39	4.67	4.67	4.67	4.67	0.46	0.125	519
64	11.50	5R	4.99	4.96	7.67	3.39	0.97	0.26	0.65	6.98	12.36	5.50	5.50	5.50	5.50	0.38	0.125	519
65	12.50	5R	4.96	4.96	9.09	3.02	4.47	0.51	0.37	7.01	15.63	4.77	4.77	4.77	4.77	0.49	0.125	392
66	13.50	5R	4.96	4.96	13.02	4.47	0.51	0.15	0.52	7.02	6.53	2.20	2.20	2.20	2.20	0.16	0.125	374
67	14.50	5R	4.97	4.97	7.75	2.19	0.38	0.17	0.64	7.03	13.42	3.55	3.55	3.55	3.55	0.23	0.125	454
68	15.50	5R	4.97	4.97	16.50	2.19	0.11	0.19	0.63	7.03	13.49	2.92	2.92	2.92	2.92	0.36	0.125	314
69	16.50	5R	4.97	4.97	17.50	1.88	0.11	0.06	0.81	6.97	10.11	2.60	2.60	2.60	2.60	0.44	0.125	415
70	17.50	5R	4.98	4.98	18.50	1.68	1.68	0.15	0.54	6.97	14.23	5.74	5.74	5.74	5.74	0.62	0.125	415
71	18.50	5R	4.96	4.96	19.50	1.47	3.47	2.08	1.17	6.97	20.00	8.36	8.36	8.36	8.36	0.77	0.125	439
72	19.50	5R	4.96	4.96	20.50	1.47	3.47	2.08	1.17	6.97	17.44	7.44	7.44	7.44	7.44	0.77	0.125	305
73	21.50	5R	4.96	4.96	21.50	1.47	3.47	2.08	1.17	6.97	14.84	6.13	6.13	6.13	6.13	0.77	0.125	349
74	22.50	5R	4.98	4.98	22.50	1.47	3.47	2.08	1.17	6.97	16.99	6.99	6.99	6.99	6.99	0.77	0.125	430
75	23.50	5R	4.99	4.99	23.50	1.47	3.47	2.08	1.17	6.97	13.27	6.77	6.77	6.77	6.77	0.77	0.125	562
76	24.50	5R	5.00	5.00	24.50	1.47	3.47	2.08	1.17	6.97	13.56	6.66	6.66	6.66	6.66	0.77	0.125	455
77	25.50	5R	5.00	5.00	25.50	1.47	3.47	2.08	1.17	6.97	15.38	8.31	8.31	8.31	8.31	0.77	0.125	440
78	26.50	5R	5.00	5.00	26.50	1.47	3.47	2.08	1.17	6.97	15.05	6.63	6.63	6.63	6.63	0.77	0.125	383
79	27.50	5R	4.98	4.98	27.50	1.47	3.47	2.08	1.17	6.98	13.22	6.35	6.35	6.35	6.35	0.77	0.125	388
80	28.50	5R	4.99	4.99	28.50	1.47	3.47	2.08	1.17	6.98	13.22	6.35	6.35	6.35	6.35	0.77	0.125	455
81	29.50	5R	5.00	5.00	29.50	1.47	3.47	2.08	1.17	6.98	13.22	6.35	6.35	6.35	6.35	0.77	0.125	662
82	30.50	5R	5.00	5.00	30.50	1.47	3.47	2.08	1.17	6.98	13.22	6.35	6.35	6.35	6.35	0.77	0.125	515
83	31.50	5R	5.00	5.00	31.50	1.47	3.47	2.08	1.17	6.98	13.22	6.35	6.35	6.35	6.35	0.77	0.125	502
84	32.50	5R	5.00	5.00	32.50	1.47	3.47	2.08	1.17	6.98	13.22	6.35	6.35	6.35	6.35	0.77	0.125	624
85	33.50	5R	5.00	5.00	33.50	1.47	3.47	2.08	1.17	6.98	13.22	6.35	6.35	6.35	6.35	0.77	0.125	539
86	34.50	5R	5.00	5.00	34.50	1.47	3.47	2.08	1.17	6.98	13.22	6.35	6.35	6.35	6.35	0.77	0.125	712
87	35.50	5R	5.00	5.00	35.50	1.47	3.47	2.08	1.17	6.98	13.22	6.35	6.35	6.35	6.35	0.77	0.125	483
88	36.50	5R	5.00	5.00	36.50	1.47	3.47	2.08	1.17	6.98	13.22	6.35	6.35	6.35	6.35	0.77	0.125	566
89	37.50	5R	5.00	5.00	37.50	1.47	3.47	2.08	1.17	6.98	13.22	6.35	6.35	6.35	6.35	0.77	0.125	542
90	38.50	5R	5.00	5.00	38.50	1.47	3.47	2.08	1.17	6.98	13.22	6.35	6.35	6.35	6.35	0.77	0.125	378
91	39.50	5R	5.00	5.00	39.50	1.47	3.47	2.08	1.17	6.98	13.22	6.35	6.35	6.35	6.35	0.77	0.125	415
92	40.50	5R	5.00	5.00	40.50	1.47	3.47	2.08	1.17	6.98	13.22	6.35	6.35	6.35	6.35	0.77	0.125	338
93	41.50	5R	5.00	5.00	41.50	1.47	3.47	2.08	1.17	6.98	13.22	6.35	6.35	6.35	6.35	0.77	0.125	442
94	42.50	5R	5.00	5.00	42.50	1.47	3.47	2.08	1.17	6.98	13.22	6.35	6.35	6.35	6.35	0.77	0.125	309
95	43.50	5R	5.00	5.00	43.50	1.47	3.47	2.08	1.17	6.98	13.22	6.35	6.35	6.35	6.35	0.77	0.125	448
96	44.50	5R	5.00	5.00	44.50	1.47	3.47	2.08	1.17	6.98	13.22	6.35	6.35	6.35	6.35	0.77	0.125	538
97	45.50	5R	5.00	5.00	45.50	1.47	3.47	2.08	1.17	6.98	13.22	6.35	6.35	6.35	6.35	0.77	0.125	340
98	46.50	5R	5.00	5.00	46.50	1.47	3.47	2.08	1.17	6.98	13.22	6.35	6.35	6.35	6.35	0.77	0.125	319
99	47.50	5R	5.00	5.00	47.50	1.47	3.47	2.08	1.17	6.98	13.22	6.35	6.35	6.35	6.35	0.77	0.125	429
100	48.50	5R	5.00	5.00	48.50	1.47	3.47	2.08	1.17	6.98	13.22	6.35	6.35	6.35	6.35	0.77	0.125	360
101	49.50	5R	5.00	5.00	49.50	1.47	3.47	2.08	1.17	6.98	13.22	6.35	6.35	6.35	6.35	0.77	0.125	324
102	50.50	5R	5.00	5.00	50.50	1.47	3.47	2.08	1.17	6.98	13.22	6.35	6.35	6.35	6.35	0.77	0.125	415
103	51.50	5R	5.00	5.00	51.50	1.47	3.47	2.08	1.17	6.98	13.22	6.35	6.35	6.35	6.35	0.77	0.125	345
104	52.50	5R	5.00	5.00	52.50	1.47	3.47	2.08	1.17	6.98	13.22	6.35	6.35	6.35	6.35	0.77	0.125	458

TABLE A-3
OCEAN CITY - NDT DATA

OCEAN CITY - TERMINAL APRON & CONN TW

NDT NO.	STATION	OFFSET ft	F1 kip	D1(0) mil	D2(18) mil	D3(36) mil	D4(48) mil	S1 k/mil	F2 kip	D1(0) mil	D2(18) mil	D3(36) mil	D4(48) mil	S2 k/mil	DSM k/mil	
1	49.50	R	5.00	4.99	4.99	4.99	4.99	4.99	4.14	1.53	0.88	0.66	0.66	6.99	11.74	
2	49.00	R	5.04	4.99	4.99	4.99	4.99	4.99	4.68	2.79	1.96	1.55	1.47	6.96	10.73	
3	48.50	R	5.00	7.76	4.89	4.99	4.99	4.99	1.14	1.51	1.55	1.47	1.47	6.93	11.72	
4	49.00	R	105.00	105.00	105.00	105.00	105.00	105.00	105.00	105.00	105.00	105.00	105.00	105.00	105.00	
5	47.50	R	105.00	105.00	105.00	105.00	105.00	105.00	105.00	105.00	105.00	105.00	105.00	105.00	105.00	
6	47.00	R	105.00	105.00	105.00	105.00	105.00	105.00	105.00	105.00	105.00	105.00	105.00	105.00	105.00	
7	46.50	R	105.00	105.00	105.00	105.00	105.00	105.00	105.00	105.00	105.00	105.00	105.00	105.00	105.00	
8	46.00	R	105.00	105.00	105.00	105.00	105.00	105.00	105.00	105.00	105.00	105.00	105.00	105.00	105.00	
9	45.50	R	105.00	105.00	105.00	105.00	105.00	105.00	105.00	105.00	105.00	105.00	105.00	105.00	105.00	
10	49.25	R	93.00	93.00	93.00	93.00	93.00	93.00	93.00	4.99	3.41	1.80	1.50	0.98	0.57	6.99
11	48.75	R	93.00	93.00	93.00	93.00	93.00	93.00	93.00	4.66	3.62	1.88	1.32	0.95	0.57	6.99
12	48.25	R	93.00	93.00	93.00	93.00	93.00	93.00	93.00	4.94	2.67	2.22	1.32	0.95	0.57	6.99
13	47.75	R	93.00	93.00	93.00	93.00	93.00	93.00	93.00	4.88	2.65	1.57	1.57	0.80	0.57	6.99
14	47.25	R	93.00	93.00	93.00	93.00	93.00	93.00	93.00	5.01	2.15	1.30	0.51	0.51	0.51	6.99
15	46.75	R	93.00	93.00	93.00	93.00	93.00	93.00	93.00	5.01	2.37	3.97	2.08	1.19	0.68	6.99
16	46.25	R	93.00	93.00	93.00	93.00	93.00	93.00	93.00	5.02	2.01	1.19	0.68	0.68	0.68	6.99
17	45.75	R	93.00	93.00	93.00	93.00	93.00	93.00	93.00	4.98	2.01	1.19	0.68	0.68	0.68	6.99
18	45.25	R	93.00	93.00	93.00	93.00	93.00	93.00	93.00	4.99	2.29	1.22	1.19	0.68	0.68	6.99
19	45.00	R	80.00	80.00	80.00	80.00	80.00	80.00	80.00	4.99	2.34	1.19	1.19	0.68	0.68	6.99
20	49.00	R	80.00	80.00	80.00	80.00	80.00	80.00	80.00	4.99	2.82	1.73	1.73	0.68	0.68	6.99
21	49.50	R	80.00	80.00	80.00	80.00	80.00	80.00	80.00	5.00	2.03	1.80	1.72	0.68	0.68	6.99
22	48.00	R	80.00	80.00	80.00	80.00	80.00	80.00	80.00	5.00	2.06	1.79	1.79	0.68	0.68	6.99
23	47.50	R	80.00	80.00	80.00	80.00	80.00	80.00	80.00	5.00	2.54	1.79	1.79	0.68	0.68	6.99
24	47.00	R	80.00	80.00	80.00	80.00	80.00	80.00	80.00	4.99	2.04	1.79	1.79	0.68	0.68	6.99
25	46.50	R	80.00	80.00	80.00	80.00	80.00	80.00	80.00	4.98	2.16	1.51	1.51	0.68	0.68	6.99
26	46.00	R	80.00	80.00	80.00	80.00	80.00	80.00	80.00	4.98	2.86	1.86	1.86	0.68	0.68	6.99
27	45.50	R	80.00	80.00	80.00	80.00	80.00	80.00	80.00	4.97	2.56	3.80	2.82	1.88	0.68	6.99
28	49.00	R	65.00	65.00	65.00	65.00	65.00	65.00	65.00	4.99	2.03	1.66	1.66	0.68	0.68	6.99
29	48.50	R	65.00	65.00	65.00	65.00	65.00	65.00	65.00	4.98	2.56	3.80	2.82	1.88	0.68	6.99
30	47.50	R	65.00	65.00	65.00	65.00	65.00	65.00	65.00	4.98	2.37	2.91	2.91	0.68	0.68	6.99
31	46.50	R	65.00	65.00	65.00	65.00	65.00	65.00	65.00	4.97	2.48	1.33	1.33	0.68	0.68	6.99
32	45.50	R	65.00	65.00	65.00	65.00	65.00	65.00	65.00	4.97	2.99	3.39	1.59	0.68	0.68	6.99
33	44.50	R	65.00	65.00	65.00	65.00	65.00	65.00	65.00	4.97	2.87	3.35	1.28	0.68	0.68	6.99
34	49.00	R	52.00	52.00	52.00	52.00	52.00	52.00	52.00	4.98	3.42	2.35	1.77	1.13	0.68	6.99
35	48.00	R	52.00	52.00	52.00	52.00	52.00	52.00	52.00	4.98	2.24	1.22	1.22	0.68	0.68	6.99
36	47.00	R	52.00	52.00	52.00	52.00	52.00	52.00	52.00	4.98	2.47	1.48	1.48	0.68	0.68	6.99
37	46.00	R	52.00	52.00	52.00	52.00	52.00	52.00	52.00	4.98	2.29	1.76	1.76	0.68	0.68	6.99
38	45.00	R	52.00	52.00	52.00	52.00	52.00	52.00	52.00	4.98	2.03	1.56	1.56	0.68	0.68	6.99
39	49.50	R	39.00	39.00	39.00	39.00	39.00	39.00	39.00	4.98	4.93	4.93	4.93	0.92	0.92	6.99
40	48.50	R	39.00	39.00	39.00	39.00	39.00	39.00	39.00	4.97	3.90	1.68	1.68	0.92	0.92	6.99
41	47.50	R	39.00	39.00	39.00	39.00	39.00	39.00	39.00	4.83	2.01	1.31	1.31	0.92	0.92	6.99
42	46.50	R	39.00	39.00	39.00	39.00	39.00	39.00	39.00	4.87	1.67	1.47	1.47	0.92	0.92	6.99
43	45.50	R	39.00	39.00	39.00	39.00	39.00	39.00	39.00	4.98	1.76	1.13	1.13	0.92	0.92	6.99
44	44.50	R	39.00	39.00	39.00	39.00	39.00	39.00	39.00	4.98	1.81	1.35	1.35	0.92	0.92	6.99
45	49.00	R	26.00	26.00	26.00	26.00	26.00	26.00	26.00	4.98	3.83	2.34	1.62	1.03	0.92	6.99
46	48.00	R	26.00	26.00	26.00	26.00	26.00	26.00	26.00	4.98	2.08	1.62	1.62	0.92	0.92	6.99
47	47.00	R	26.00	26.00	26.00	26.00	26.00	26.00	26.00	4.98	1.45	0.94	0.94	0.92	0.92	6.99
48	46.00	R	26.00	26.00	26.00	26.00	26.00	26.00	26.00	4.98	1.72	1.39	1.39	0.92	0.92	6.99
49	45.00	R	26.00	26.00	26.00	26.00	26.00	26.00	26.00	4.98	1.29	0.86	0.86	0.92	0.92	6.99
50	49.50	R	13.00	13.00	13.00	13.00	13.00	13.00	13.00	4.98	3.61	2.07	1.34	0.44	0.44	6.98
51	48.50	R	13.00	13.00	13.00	13.00	13.00	13.00	13.00	4.98	2.00	1.40	1.40	0.44	0.44	6.98
52	47.50	R	13.00	13.00	13.00	13.00	13.00	13.00	13.00	4.98	1.40	0.53	1.21	0.21	0.21	6.98
53	46.50	R	13.00	13.00	13.00	13.00	13.00	13.00	13.00	4.98	3.48	1.82	1.82	0.21	0.21	6.98
54	45.50	R	13.00	13.00	13.00	13.00	13.00	13.00	13.00	4.98	2.74	1.00	1.00	0.21	0.21	6.98

Table A-3 (Cont'd.)

OCEAN CITY - TERMINAL APRON & CONN TW

NDT	STATION NO.	OFFSET ft	F1 kip	F1 mil	D1(0) mil	D2(18) mil	D3(36) mil	D4(48) mil	S1 k/mil	D1(0) mil	D2(18) mil	D3(36) mil	D4(48) mil	S2 k/mil	DSM k/in
55	49.50	13 R	4.97	7.01	7.67	4.20	1.99	1.29	0.65	6.97	1.74	1.174	0.74	0.64	528
56	49.00	BL	4.99	7.38	5.03	1.77	1.05	0.53	0.53	7.01	1.82	7.85	2.66	1.90	487
57	48.00	BL	5.00	7.68	5.18	1.62	1.09	0.51	0.51	7.00	1.75	4.82	2.31	1.55	371
59	46.00	BL	5.00	7.01	4.74	2.43	1.54	0.65	0.65	6.99	1.85	6.94	3.61	1.56	535
60	45.00	BL	5.00	11.65	5.80	2.28	1.35	0.43	0.43	6.96	19.00	9.44	3.49	2.29	476
61	49.50	13 L	4.98	10.50	5.31	2.11	1.34	0.48	0.48	7.01	1.71	3.12	2.06	0.37	269
62	48.50	13 L	5.02	16.39	4.07	2.05	1.40	0.55	0.55	7.02	14.10	7.54	3.58	2.00	374
63	47.50	13 L	5.02	9.02	4.83	2.20	1.40	0.61	0.61	6.97	12.31	8.14	3.64	2.10	619
64	49.50	103 L	4.98	8.13	5.28	2.43	1.65	0.60	0.60	7.03	13.05	8.94	3.77	2.40	402
65	48.50	103 L	5.00	5.66	5.38	2.32	1.43	0.60	0.60	6.96	13.05	8.94	3.77	2.40	474
200	2.00	5 RR	4.96	5.22	1.75	1.01	0.53	0.53	0.53	6.97	15.11	8.6	2.74	1.69	346
201	2.00	5 RR	4.96	9.46	5.22	1.79	1.03	0.53	0.53	6.97	10.09	5.95	2.74	1.58	559
202	2.00	5 RR	4.97	5.02	5.02	1.01	0.53	0.53	0.53	7.02	14.28	8.48	2.76	1.58	376
203	2.00	5 RR	4.98	4.98	4.98	0.53	0.53	0.53	0.53	7.02	12.10	6.22	2.81	1.52	402
205	2.00	5 RR	4.98	4.98	4.98	0.53	0.53	0.53	0.53	7.02	15.12	6.12	2.25	1.52	472
207	2.00	5 RR	4.97	5.02	5.02	1.01	0.53	0.53	0.53	7.01	15.33	6.1	1.47	0.77	363
208	2.00	5 RR	4.97	5.02	5.02	1.01	0.53	0.53	0.53	7.01	17.13	6.8	1.47	0.77	339
209	2.00	5 RR	4.98	5.02	5.02	1.01	0.53	0.53	0.53	7.01	17.13	6.8	1.47	0.77	307
210	2.00	5 RR	4.98	5.02	5.02	1.01	0.53	0.53	0.53	7.01	17.13	6.8	1.47	0.77	322
211	2.00	5 RR	4.98	5.02	5.02	1.01	0.53	0.53	0.53	7.01	17.13	6.8	1.47	0.77	346
212	2.00	5 RR	4.98	5.02	5.02	1.01	0.53	0.53	0.53	7.01	17.13	6.8	1.47	0.77	666
213	2.00	5 RR	4.98	5.02	5.02	1.01	0.53	0.53	0.53	7.01	17.13	6.8	1.47	0.77	537
215	2.00	5 RR	4.98	5.02	5.02	1.01	0.53	0.53	0.53	7.01	17.13	6.8	1.47	0.77	483

Table A-3 (Cont'd.)

OCEAN CITY - NEW PARALLEL TW

NO.	NDT	STATION	OFFSET	F1	D1(0)	D2(18)	D3(36)	D4(48)	S1	F2	D1(0)	D2(18)	D3(36)	D4(48)	S2	DSM	DSM	TC	
				kip	mil	mil	mil	mil	k/mil	kip	mil	mil	mil	mil	k/mil	k/in	k/in		
100	49.00	5 L	4.98	7.80	4.06	1.66	1.19	0.64	6.96	6.23	2.55	1.83	0.59	0.59	4.84	692			
101	48.50	5 L	4.98	7.64	3.80	1.55	1.14	0.65	7.02	5.81	2.40	1.81	0.55	0.55	4.86	695			
102	48.00	5 L	4.98	8.27	4.35	1.84	1.36	0.60	6.95	6.46	2.73	2.01	0.51	0.51	4.63	663			
103	47.50	5 L	5.03	8.91	4.52	1.77	1.66	0.67	6.98	11.29	6.04	2.44	1.81	0.62	0.62	4.15	593		
104	47.00	5 L	4.97	7.88	4.28	1.78	1.29	0.63	6.66	11.90	6.42	2.64	1.92	0.59	0.59	521	775		
105	46.50	5 L	5.04	8.32	4.51	1.76	1.28	0.61	7.05	12.85	6.75	2.66	1.97	0.55	0.55	4.96	709		
106	46.00	5 L	4.99	7.86	4.62	1.85	1.30	0.63	7.01	12.07	6.89	2.78	1.97	0.58	0.58	4.46	638		
107	45.50	5 L	5.04	7.69	4.18	1.92	1.30	0.75	6.98	9.82	6.23	2.82	1.94	0.71	0.71	4.80	686		
108	49.25	5 R	5.03	6.29	3.80	1.70	1.22	0.80	6.99	9.27	5.55	2.52	1.78	0.75	0.75	619	885		
109	48.75	5 R	5.03	7.05	3.97	1.54	1.09	0.71	7.03	10.71	5.99	2.29	1.59	0.66	0.66	658	941		
110	48.25	5 R	4.98	7.13	4.04	1.67	1.20	0.70	6.94	10.67	5.98	2.49	1.81	0.65	0.65	553	800		
111	47.78	5 R	4.98	7.36	3.96	1.68	1.23	0.67	7.00	11.14	5.83	2.48	1.80	0.63	0.63	540	773		
112	47.25	5 R	4.96	7.37	4.04	1.54	1.10	0.67	6.99	11.10	5.81	2.27	1.66	0.63	0.63	545	779		
113	46.75	5 R	5.01	7.87	4.34	1.78	1.24	0.64	6.97	12.08	6.57	2.73	1.94	0.58	0.58	471	673		
114	46.25	5 R	5.01	7.22	4.19	1.67	1.19	0.69	6.99	10.89	6.26	2.48	1.72	0.64	0.64	554	792		
115	45.75	5 R	4.96	10.64	7.26	3.42	1.85	0.47	6.95	11.10	5.39	2.97	2.06	0.42	0.42	327	467		
116	45.25	5 R	5.04	7.68	4.35	1.89	1.33	0.65	6.99	11.71	6.73	2.94	2.04	0.59	0.59	491	703		
117	49.00	15 R	5.11	7.91	4.41	1.88	1.36	0.63	7.05	12.05	6.55	2.81	1.89	0.57	0.57	502	719		
118	48.00	15 R	4.97	7.96	4.06	1.69	1.24	0.63	6.99	12.21	6.05	2.53	1.88	0.51	0.51	472	674		
119	47.00	15 R	4.96	7.91	4.58	1.65	1.13	0.56	6.98	13.71	7.02	2.50	1.66	0.35	0.35	413	590		
120	46.00	15 R	5.00	5.00	11.80	7.64	2.25	1.08	0.42	6.94	19.57	12.71	3.70	1.85	0.44	0.44	250	357	
121	44.00	15 R	5.04	4.97	10.28	6.11	1.64	0.74	0.43	7.02	16.89	10.22	2.73	1.16	0.42	0.42	310	443	
122	43.00	15 R	5.00	5.00	11.68	7.02	2.27	1.13	0.43	6.99	18.99	11.99	3.79	1.90	0.37	0.37	272	389	
123	42.00	15 R	4.98	10.83	5.63	1.57	0.85	0.46	6.97	17.60	9.15	2.44	1.29	0.40	0.40	294	421		
124	41.00	15 R	4.96	10.99	4.96	1.69	1.24	0.63	6.99	12.21	6.05	2.81	1.88	0.37	0.37	234	355		
125	41.50	15 L	4.96	11.12	3.90	1.65	1.13	0.56	6.98	19.35	11.52	3.35	1.80	0.36	0.36	268	383		
126	42.50	15 L	5.01	11.93	6.84	1.98	1.08	0.42	7.00	19.35	11.52	3.35	1.80	0.44	0.44	345	494		
127	43.50	15 L	4.97	5.07	1.60	1.60	1.00	0.50	6.94	15.63	8.21	2.49	1.54	0.42	0.42	422	536		
128	44.50	15 L	5.02	10.52	4.58	1.44	0.78	0.48	7.01	17.27	8.75	2.33	1.25	0.42	0.42	416	535		
129	45.50	15 L	5.00	4.57	1.64	1.64	1.00	0.59	6.95	13.19	6.82	2.38	1.64	0.47	0.47	416	536		
130	46.50	15 L	4.97	9.36	5.15	1.87	1.28	0.53	6.97	14.70	7.85	2.85	1.95	0.47	0.47	432	618		
131	47.50	15 L	5.00	11.93	6.84	1.64	1.19	0.61	6.99	12.87	6.70	2.59	1.91	0.43	0.43	492	703		
132	48.50	15 L	5.03	1.54	1.54	1.15	0.66	0.66	6.96	11.53	5.49	2.31	1.73	0.41	0.41	348	498		
133	49.00	5 R	5.02	5.07	1.68	0.91	0.52	0.52	7.01	15.36	8.82	2.70	1.46	0.46	0.46	422	463		
134	43.00	5 R	4.98	5.44	5.81	2.02	1.10	0.49	6.96	16.38	9.39	3.34	1.85	0.42	0.42	324	503		
135	42.00	5 R	5.02	7.53	2.56	1.32	0.41	0.41	6.97	12.07	4.07	1.40	0.45	0.45	332	503			
136	41.00	5 R	5.02	12.39	7.62	2.79	1.43	0.49	2.99	6.39	3.78	1.37	0.73	0.47	0.47	339	484		
137	41.50	5 R	4.99	6.17	1.91	0.97	0.49	0.49	7.01	16.42	9.64	3.09	1.54	0.43	0.43	326	465		
138	42.50	5 R	5.00	6.17	1.77	0.88	0.47	0.47	6.97	16.95	9.71	2.85	1.53	0.41	0.41	311	445		
139	43.50	5 R	5.03	9.01	5.20	1.65	0.56	0.56	6.96	14.69	8.03	2.55	1.53	0.41	0.41	386	552		
140	44.50	5 R	4.99	5.34	9.95	5.20	1.57	0.87	0.87	6.96	15.91	8.52	2.53	1.37	0.44	0.44	473		

TETERBORO FIELD DATA

TABLE A-4

NDT NO.	STATION ft	OFFSET ft	F1 kip mil	D1 (0) mil	D2(18) mil	D3(36) mil	D4(48) mil	S1 k/mil	F2 kip mil	D1 (0) mil	D2(18) mil	D3(36) mil	S2 k/mil	TCF	DSM kip/in		
				kip mil	kip mil	kip mil	kip mil	kip mil	kip mil	kip mil	kip mil	kip mil	kip mil	kip mil	kip mil		
1	31.00	56 R	5.02	4.79	3.06	1.72	1.20	1.05	6.98	7.12	4.83	2.59	1.75	0.98	1.18	841	
		56 R	5.04	4.81	3.22	1.83	1.24	1.05	7.00	7.17	4.83	2.70	1.76	0.98	1.18	831	
2	33.00	Avg	5.03	4.80	3.14	1.78	1.22	1.05	6.99	7.15	4.83	2.65	1.76	0.98	1.18	836	
		56 R	4.98	7.93	5.09	2.30	1.24	0.63	6.96	12.59	8.12	3.66	2.04	0.55	1.18	425	
3	35.00	56 R	4.96	8.12	5.24	2.37	1.30	0.61	7.06	12.96	8.22	3.74	1.97	0.54	1.18	434	
		Avg	4.97	8.03	5.17	2.34	1.27	0.62	7.01	12.78	8.17	3.70	2.01	0.55	1.18	429	
4	37.15	56 R	4.96	4.75	3.27	2.05	1.45	1.04	7.02	7.18	4.86	3.18	2.23	0.98	1.18	848	
		56 R	5.04	4.83	3.45	2.18	1.51	1.04	7.00	7.15	5.20	3.31	2.20	0.98	1.18	845	
5	39.00	Avg	5.00	4.79	3.36	2.12	1.48	1.04	7.01	7.17	5.03	3.25	2.22	0.98	1.18	846	
		56 R	5.04	4.17	3.05	1.92	1.32	1.21	7.00	6.20	4.26	2.78	1.97	1.13	1.18	966	
6	41.00	56 R	4.96	4.44	3.11	1.85	1.24	1.12	7.02	6.75	4.70	2.86	2.03	1.12	1.18	966	
		56 R	5.00	4.55	3.19	1.91	1.33	1.10	7.02	6.82	4.24	2.86	2.03	1.12	1.18	890	
7	43.00	Avg	4.98	4.50	3.15	1.88	1.29	1.11	7.02	6.99	6.22	4.26	2.82	2.00	1.12	1.18	966
		56 R	5.04	3.20	2.41	1.62	1.18	1.16	7.02	6.75	4.70	2.82	2.00	1.12	1.18	1390	
8	45.00	Avg	5.01	3.23	2.42	1.62	1.20	1.15	6.97	6.97	4.64	3.41	2.25	1.67	1.50	1.18	1400
		56 R	5.00	3.44	2.44	1.51	1.08	1.45	7.00	5.08	3.45	2.19	1.54	1.38	1.18	1220	
9	47.00	Avg	5.00	3.45	2.45	1.51	1.08	1.45	6.97	5.06	3.48	2.16	1.55	1.38	1.18	1224	
		56 R	4.98	6.97	4.47	2.05	1.28	0.71	7.06	10.98	6.98	3.34	1.94	0.64	1.18	519	
10	49.00	Avg	5.02	4.06	2.83	1.67	1.19	1.26	0.72	7.04	10.92	6.87	3.26	1.89	0.64	1.18	521
		56 R	5.02	4.05	2.82	1.64	1.16	1.24	0.72	7.02	10.85	6.75	3.17	1.83	0.65	1.18	1049
		Avg	5.02	4.06	2.83	1.67	1.19	1.26	0.72	7.04	10.92	6.87	3.26	1.89	0.64	1.18	1067
		56 R	4.96	4.89	3.33	2.15	1.52	1.03	6.96	7.19	5.12	3.17	2.26	0.97	1.25	843	
		Avg	4.99	4.89	3.41	2.16	1.55	1.02	6.98	7.21	5.18	3.16	2.27	0.97	1.25	858	

Table A-4 (Cont'd.)

TETERBORO FIELD DATA

NDT NO.	STATION	OFFSET ft	F1	D1 (0)	D2(18)	D3(36)	D4(48)	S1	F2	D1 (0)	D2(18)	D3(36)	D4(48)	S2	TCF	DSM	
			kip	mil	mil	mil	mil	k/mil	kip	mil	mil	mil	mil	k/mil	mil	kip/in	
11	51.00	56 R	4.96	6.02	4.20	2.55	1.77	0.82	6.98	9.33	6.73	4.10	2.84	0.75	1.27	610	
		56 R	4.96	6.28	4.28	2.62	1.88	0.79	7.00	9.51	6.70	4.18	2.87	0.74	1.27	632	
12	53.00	56 R	5.00	4.07	2.74	1.54	1.05	1.23	7.06	6.15	3.82	2.12	1.53	1.15	1.27	990	
		56 R	5.02	4.09	2.76	1.51	1.11	1.23	6.98	6.12	4.04	2.29	1.57	1.14	1.27	966	
13	55.00	Avg	5.01	4.08	2.75	1.53	1.08	1.23	7.02	6.14	3.93	2.21	1.55	1.14	1.27	978	
		56 R	5.02	3.06	2.26	1.62	1.33	1.64	7.02	4.50	3.15	2.28	1.93	1.56	1.27	1389	
14	57.00	56 R	5.04	3.11	2.30	1.66	1.35	1.62	6.98	4.47	3.34	2.32	1.87	1.56	1.27	1426	
		Avg	5.03	3.09	2.28	1.64	1.34	1.63	7.00	4.49	3.25	2.30	1.90	1.56	1.27	978	
15	59.00	56 R	4.96	3.91	2.92	2.01	1.55	1.27	6.94	5.70	4.09	2.81	2.23	1.22	1.27	1106	
		56 R	4.96	3.95	3.03	2.07	1.56	1.26	7.02	5.80	4.15	2.85	2.25	1.21	1.27	1114	
16	61.00	Avg	4.96	3.93	2.98	2.04	1.56	1.26	6.98	5.75	4.12	2.83	2.24	1.21	1.27	1110	
		56 R	4.96	5.53	4.00	2.92	2.34	0.90	7.02	8.13	6.20	4.33	3.42	0.86	1.27	792	
17	63.00	56 R	4.98	6.55	4.53	2.99	2.38	0.79	7.02	6.98	8.15	5.93	4.13	3.30	0.86	1.27	811
		Avg	4.99	6.44	4.63	3.05	2.37	0.78	7.00	8.14	6.07	4.23	3.36	0.86	1.27	802	
18	65.00	56 R	5.00	5.95	3.84	2.17	1.55	0.84	6.96	8.89	6.10	3.42	2.26	0.78	1.27	667	
		56 R	5.00	6.02	4.21	2.35	1.63	0.83	6.98	9.02	6.18	3.33	2.34	0.77	1.27	660	
19	32.00	Avg	4.98	4.97	3.13	1.68	1.14	1.00	7.00	7.53	4.66	2.40	1.63	0.93	1.27	788	
		32 R	4.98	6.79	4.43	2.26	1.45	0.73	6.98	10.75	6.62	3.43	2.12	0.65	1.25	505	
		Avg	4.98	6.90	4.48	2.31	1.45	0.72	6.96	10.73	6.82	3.56	2.20	0.65	1.25	530	

Table A-4 (Cont'd.)

TEREBORO FIELD DATA

NDT NO.	STATION ft	OFFSET ft	F1	D1 (0) kip	D2(18) mil	D3(36) mil	D4(48) mil	S1 kip/mil	F2	D1 (0) kip	D2(18) mil	D3(36) mil	D4(48) mil	S2 kip/mil	TCF	DSM kip/in
20	34.00	32 R	4.96	5.86	3.56	1.69	1.04	0.85	7.06	9.46	6.12	2.88	1.61	0.75	1.25	583
		32 R	5.04	6.24	3.93	1.85	1.08	0.81	6.98	9.52	5.93	2.77	1.56	0.73	1.25	591
Avg			5.00	6.05	3.75	1.77	1.06	0.83	7.02	9.49	6.03	2.83	1.59	0.74	1.25	587
21	36.00	32 R	4.98	5.12	3.46	1.84	1.14	0.97	7.06	8.07	5.27	2.76	1.77	0.87	1.25	705
		32 R	4.96	5.25	3.54	1.88	1.20	0.94	6.94	7.93	5.32	2.71	1.71	0.88	1.25	739
Avg			4.97	5.19	3.50	1.86	1.17	0.96	7.00	8.00	5.30	2.74	1.74	0.88	1.25	722
22	38.00	32 R	5.04	5.49	3.61	2.09	1.39	0.92	7.02	8.31	5.63	3.19	2.03	0.84	1.25	702
		32 R	4.98	5.49	3.75	2.07	1.36	0.91	6.94	8.29	5.62	3.29	2.14	0.84	1.25	700
Avg			5.01	5.49	3.68	2.08	1.38	0.91	6.98	8.30	5.63	3.24	2.09	0.84	1.25	701
23	40.00	32 R	5.04	6.70	4.54	2.43	1.61	0.75	6.96	10.29	6.93	3.66	2.46	0.68	1.25	535
		32 R	4.98	6.90	4.69	2.50	1.63	0.72	6.94	10.23	6.91	3.77	2.44	0.68	1.25	589
Avg			5.01	6.80	4.62	2.47	1.62	0.74	6.95	10.26	6.92	3.72	2.45	0.68	1.25	562
24	42.00	32 R	5.00	4.54	3.02	1.75	1.17	1.10	6.98	6.85	4.64	2.52	1.68	1.02	1.25	857
		32 R	5.02	4.69	3.15	1.81	1.16	1.07	7.02	6.98	4.47	2.59	1.72	1.01	1.25	873
Avg			5.01	4.62	3.09	1.78	1.17	1.09	7.00	6.92	4.56	2.56	1.70	1.01	1.25	865
25	44.00	32 R	4.98	6.30	3.90	1.73	1.03	0.79	7.04	9.52	6.10	2.72	1.51	0.74	1.25	640
		32 R	4.98	6.30	4.00	1.74	1.02	0.79	6.94	9.47	6.02	2.65	1.53	0.73	1.25	618
Avg			4.98	6.30	3.95	1.74	1.03	0.79	6.99	9.50	6.06	2.69	1.52	0.74	1.25	629
26	46.00	32 R	4.96	8.46	5.15	2.11	1.28	0.59	7.02	13.56	8.13	3.24	1.85	0.52	1.25	404
		32 R	4.98	8.57	5.23	2.19	1.26	0.58	7.04	13.75	8.33	3.32	1.95	0.51	1.25	398
Avg			4.97	8.52	5.19	2.15	1.27	0.58	7.03	13.66	8.23	3.28	1.90	0.51	1.25	401
27	48.00	32 R	5.02	4.65	2.83	1.40	0.89	1.08	7.06	7.16	4.33	2.11	1.33	0.99	1.25	813
		32 R	4.98	4.65	2.85	1.37	0.88	1.07	6.94	7.04	4.33	2.04	1.28	0.99	1.25	820
Avg			5.00	4.65	2.84	1.39	0.89	1.08	7.00	7.10	4.33	2.08	1.31	0.99	1.25	816
28	50.00	32 R	4.98	4.33	2.64	1.35	0.95	1.15	6.98	6.66	4.08	2.02	1.35	1.05	1.38	858
		32 R	5.04	4.42	2.68	1.41	0.94	1.14	6.96	6.66	4.05	2.03	1.30	1.05	1.38	857
Avg			5.01	4.38	2.66	1.38	0.95	1.15	6.97	6.66	4.07	2.03	1.33	1.05	1.38	858
29	52.00	32 R	5.02	4.53	2.37	1.27	0.91	1.11	6.94	6.83	3.54	1.93	1.33	-1.02	1.42	835
		32 R	4.96	4.55	2.29	1.27	0.90	1.09	7.02	6.85	3.46	1.87	1.35	1.02	1.42	896
Avg			4.99	4.54	2.33	1.27	0.91	1.10	6.98	6.86	3.50	1.90	1.34	1.02	1.42	865

Table A-4 (Cont'd.)

TEREBORO FIELD DATA

NDT NO.	STATION	OFFSET ft	F1	D1 (0)	D2(18)	D3(36)	D4(48)	S1	F2	D1 (0)	D2(18)	D3(36)	D4(48)	S2	TCF	DSM	Kip/in
			kip	mil	mil	mil	mil	k/mil	kip	mil	mil	mil	mil	k/mil	mil	mil	
30	54.00	32 R	5.00	4.23	2.54	1.55	1.13	1.18	6.98	6.43	3.84	2.35	1.71	1.09	1.42	900	
		32 R	5.04	4.34	2.54	1.59	1.15	1.16	7.04	6.53	3.99	2.24	1.62	1.08	1.42	913	
31	56.00	32 R	4.98	3.68	2.39	1.56	1.22	1.35	6.94	5.41	3.53	2.32	1.77	1.28	1.42	1133	
		32 R	5.02	3.75	2.38	1.55	1.21	1.34	6.96	5.45	3.58	2.30	1.75	1.28	1.42	1141	
32	58.00	32 R	5.02	4.20	2.72	1.85	1.54	1.20	7.06	6.29	4.23	2.71	2.21	1.12	1.42	976	
		32 R	4.96	4.22	2.95	1.98	1.60	1.18	6.98	6.20	4.22	2.81	2.19	1.13	1.42	1020	
33	60.00	32 R	4.96	6.30	4.37	2.73	2.11	0.79	6.94	9.19	6.38	3.97	3.02	0.76	1.42	976	
		32 R	4.96	6.38	4.46	2.71	2.09	0.78	7.04	9.51	6.65	4.08	3.18	0.74	1.42	665	
34	62.00	32 R	4.96	5.70	3.61	2.13	1.62	0.87	7.04	8.85	5.60	3.23	2.36	0.80	1.42	660	
		32 R	5.04	5.83	3.76	2.23	1.65	0.86	6.98	8.79	5.73	3.24	2.45	0.79	1.42	655	
35	64.00	32 R	4.98	5.67	3.57	1.96	1.43	0.88	7.02	8.55	5.43	2.98	2.12	0.82	1.42	708	
		32 R	5.00	5.71	3.51	1.98	1.42	0.88	6.98	8.52	5.49	3.04	2.02	0.82	1.42	705	
37	31.00	6.5 R	4.96	4.40	2.97	1.65	1.14	1.13	6.98	6.72	4.54	2.47	1.72	1.04	1.25	871	
		6.5 R	4.96	4.45	2.91	1.17	1.14	1.11	6.94	6.74	4.61	2.51	1.68	1.03	1.25	865	
38	33.00	6.5 R	5.00	4.81	3.35	1.85	1.23	1.04	7.02	7.47	5.21	3.02	1.90	0.94	1.25	759	
		6.5 R	5.02	4.92	3.25	1.86	1.27	1.02	7.04	7.57	5.30	3.03	2.00	0.93	1.25	762	
39	35.00	6.5 R	4.96	5.11	3.28	1.74	1.16	0.97	6.96	7.87	5.04	2.70	1.75	0.89	1.25	732	
		6.5 R	4.98	5.16	3.28	1.79	1.19	0.97	7.02	7.95	5.03	2.76	1.82	0.88	1.25	731	
		Avg	4.97	5.14	3.28	1.77	1.18	0.97	7.00	7.91	5.04	2.73	1.79	0.88	1.25	732	

Table A-4 (Cont'd.)

TEETERBORO FIELD DATA

NDT NO.	STATION NO.	OFFSET ft	F1	D1 (0)	D2(18)	D3(36)	S1	F2	D1 (0)	D2(18)	D3(36)	S2	TCF	DSM		
			kip	mil	mil	mil	k/mil	kip	mil	mil	mil	k/mil	mil	kip/in		
40	37.15	6.5 R	5.04	4.20	2.66	1.54	1.05	1.20	6.98	6.20	4.07	2.39	1.58	1.13	1.25	970
		6.5 R	4.96	4.10	2.72	1.56	1.05	1.21	6.94	6.22	4.06	2.39	1.53	1.12	1.25	934
41	39.00	6.5 R	4.96	4.44	2.93	1.73	1.20	1.20	6.96	6.21	4.07	2.39	1.56	1.12	1.25	952
		6.5 R	4.96	4.56	3.03	1.78	1.25	1.09	6.94	6.95	4.37	2.38	1.80	1.00	1.25	823
42	41.00	6.5 R	4.98	4.35	3.09	1.96	1.37	1.14	6.98	6.62	4.53	2.89	2.09	1.05	1.25	881
		6.5 R	5.00	4.45	3.07	1.94	1.39	1.12	7.04	6.74	4.68	2.95	2.10	1.04	1.25	891
43	43.00	6.5 R	4.98	3.90	2.66	1.58	1.15	1.28	7.06	6.03	4.07	2.40	1.73	1.17	1.25	977
		6.5 R	4.96	4.01	2.71	1.64	1.16	1.24	6.98	6.09	3.85	2.32	1.68	1.15	1.25	971
44	45.00	6.5 R	4.98	4.31	2.78	1.62	1.13	1.16	6.94	6.63	4.62	2.69	1.71	1.16	1.25	974
		6.5 R	5.02	4.41	2.98	1.72	1.16	1.14	6.94	6.53	4.47	2.61	1.77	1.06	1.25	888
45	47.00	6.5 R	5.00	5.96	3.78	1.87	1.19	0.84	7.04	9.40	5.96	2.88	1.80	0.75	1.25	906
		6.5 R	5.02	6.00	3.82	1.85	1.18	0.84	7.02	9.36	5.99	2.84	1.86	0.75	1.25	908
46	49.00	6.5 R	5.00	4.00	2.52	1.43	0.99	1.25	6.96	6.08	3.98	2.23	1.44	1.14	1.37	962
		6.5 R	4.98	4.00	2.59	1.44	0.99	1.25	6.98	6.15	3.88	2.19	1.47	1.13	1.37	930
47	51.00	6.5 R	5.00	3.16	2.06	1.31	0.96	1.58	7.00	4.76	3.07	1.98	1.46	1.47	1.41	1250
		6.5 R	5.00	3.17	2.05	1.29	0.97	1.58	7.02	4.77	3.12	2.21	1.46	1.14	1.37	936
48	53.00	6.5 R	4.98	3.37	2.05	1.29	0.98	1.48	7.02	5.07	3.17	1.99	1.48	1.47	1.41	1238
		6.5 R	5.00	3.40	2.14	1.34	1.00	1.47	7.04	5.12	3.23	2.01	1.46	1.46	1.41	1193
49	55.00	6.5 R	5.00	2.30	1.53	1.16	1.00	2.17	6.94	3.32	2.26	1.72	1.41	2.09	1.41	1902
		6.5 R	5.02	2.33	1.56	1.18	1.04	2.15	6.98	3.32	2.14	1.64	1.42	2.10	1.41	1980
	Avg	5.01	2.32	1.55	1.17	1.02	2.16	6.96	3.32	2.20	1.68	1.42	2.10	1.41	1961	

Table A-4 (Cont'd.)

TEREBORO FIELD DATA

	NDT	STATION	OFFSET ft	F1 kip	D1 (0) mil	D2(18) mil	D3(36) mil	S1 k/mil	F2 kip	D1 (0) mil	D2(18) mil	D3(36) mil	S2 k/mil	TCF	DSM kip/in
	NO.														
50	57.00	6.5 R	5.02	3.46	2.47	1.69	1.33	1.45	7.00	5.38	3.75	2.50	2.00	1.30	1.41
		6.5 R	5.04	3.66	2.46	1.66	1.36	1.38	7.06	5.44	3.77	2.58	2.03	1.30	1.41
Avg	5.03	3.56	2.47	1.68	1.35	1.41	1.03	5.41	3.76	2.54	2.02	1.30	1.41	1.41	1031 1135
51	59.00	6.5 R	4.96	4.23	2.85	2.01	1.75	1.17	7.02	6.36	4.40	3.05	2.55	1.10	1.41
		6.5 R	5.04	4.39	3.04	2.12	1.81	1.15	7.00	6.41	4.42	3.07	2.58	1.09	1.41
Avg	5.00	4.31	2.95	2.07	1.78	1.16	7.01	6.39	4.41	3.06	2.57	1.10	1.41	1.41	1083
52	61.00	6.5 R	5.02	4.65	3.17	2.19	1.79	1.08	7.04	6.99	4.77	3.15	2.54	1.01	1.45
		6.5 R	4.96	4.64	3.20	2.22	1.78	1.07	6.96	6.93	4.52	3.19	2.57	1.00	1.45
Avg	4.99	4.65	3.19	2.21	1.79	1.07	7.00	6.96	4.65	3.17	2.56	1.01	1.45	1.45	969
53	63.00	6.5 R	4.98	4.65	2.76	1.56	1.22	1.07	7.06	7.37	4.35	2.52	1.89	0.96	1.45
		6.5 R	4.96	4.77	2.87	1.64	1.25	1.04	6.96	7.44	4.38	2.53	1.90	0.94	1.45
Avg	4.97	4.71	2.82	1.60	1.24	1.06	7.01	7.41	4.37	2.53	1.90	0.95	1.45	1.45	763 773
54	65.00	6.5 R	4.98	4.75	2.69	1.40	1.05	1.05	7.00	7.55	4.24	2.21	1.63	0.93	1.45
		6.5 R	5.00	4.82	2.75	1.44	1.10	1.04	6.98	7.52	4.27	2.21	1.56	0.93	1.45
Avg	4.99	4.79	2.72	1.42	1.08	1.04	6.99	7.54	4.26	2.21	1.60	0.93	1.45	1.45	727
55	32.00	18 L	5.04	5.95	3.85	1.84	1.13	0.85	7.00	8.89	5.68	2.85	1.70	0.79	1.16
		18 L	4.98	5.90	3.66	1.81	1.12	0.84	6.96	8.72	5.60	2.80	1.68	0.80	1.16
Avg	5.01	5.93	3.76	1.83	1.13	0.85	6.98	8.81	5.64	2.83	1.69	0.79	1.16	1.16	667 702
56	34.00	18 L	5.04	6.86	4.30	1.91	1.21	0.73	7.02	11.12	6.90	3.04	1.89	0.63	1.16
		18 L	5.04	7.14	4.34	1.93	1.20	0.71	7.00	11.33	7.09	3.06	1.88	0.62	1.16
Avg	5.04	7.00	4.32	1.92	1.21	0.72	7.01	11.23	7.00	3.05	1.89	0.62	1.16	1.16	684
57	36.00	18 L	5.00	5.50	3.51	1.72	1.06	0.91	7.04	8.59	5.45	2.72	1.61	0.82	1.16
		18 L	4.96	5.50	3.45	1.70	1.04	0.90	6.98	8.65	5.34	2.63	1.55	0.81	1.16
Avg	4.98	5.50	3.48	1.71	1.05	0.91	7.01	8.62	5.40	2.68	1.58	0.81	1.16	1.16	666
58	38.00	18 L	5.02	4.79	3.07	1.70	1.16	1.05	6.98	7.30	4.65	2.53	1.72	0.96	1.16
		18 L	5.04	4.88	3.09	1.77	1.19	1.03	6.96	7.31	4.71	2.55	1.72	0.95	1.16
Avg	5.03	4.84	3.08	1.74	1.18	1.04	6.96	7.31	4.68	2.54	1.72	0.95	1.16	1.16	781 782

Table A-4 (Cont'd.)
TERBORO FIELD DATA

NOT NO.	STATION ft	OFFSET ft	F1	D1 (0)	D2(18)	D3(36)	D4(48)	S1	F2	D1 (0)	D2(18)	D3(36)	D4(48)	S2	TCF	DSM kip/in
			kip	mil	mil	mil	mil	k/mil	kip	mil	mil	mil	k/mil	mil	k/mil	kip
59	40.00	18 L	5.04	5.26	3.56	2.15	1.47	0.96	6.96	7.82	5.50	3.34	2.28	0.89	1.16	750
		18 L	5.04	5.35	3.62	2.18	1.53	0.94	7.04	7.98	5.42	3.40	2.30	0.88	1.16	760
		Avg	5.04	5.31	3.59	2.17	1.50	0.95	7.00	7.90	5.46	3.37	2.29	0.89	1.16	755
60	42.00	18 L	4.98	4.25	2.81	1.67	1.16	1.17	7.04	6.51	4.33	2.59	1.78	1.08	1.09	912
		18 L	4.96	4.23	2.86	1.73	1.15	1.17	6.94	6.32	4.22	2.61	1.80	1.10	1.09	947
		Avg	4.97	4.24	2.84	1.70	1.16	1.17	6.99	6.42	4.28	2.60	1.79	1.09	1.09	929
61	44.00	18 L	4.96	4.24	2.74	1.56	1.05	1.17	6.96	6.48	4.02	2.25	1.48	1.07	1.09	893
		18 L	4.98	4.30	2.80	1.56	1.05	1.16	7.04	6.58	4.06	2.30	1.53	1.07	1.09	904
		Avg	4.97	4.27	2.77	1.56	1.05	1.16	7.00	6.53	4.04	2.28	1.51	1.07	1.09	898
62	46.00	18 L	5.04	5.92	3.83	2.05	1.32	0.85	6.94	8.88	5.74	3.07	1.99	0.78	1.09	642
		18 L	4.98	5.93	3.92	2.10	1.35	0.84	6.98	9.06	5.91	3.19	1.93	0.77	1.09	639
		Avg	5.01	5.93	3.88	2.08	1.34	0.85	6.96	8.97	5.83	3.13	1.96	0.78	1.09	640
63	48.00	18 L	4.98	3.79	2.34	1.20	0.84	1.31	7.06	6.06	3.62	1.72	1.18	1.17	1.11	916
		18 L	5.04	3.91	2.37	1.21	0.86	1.29	6.94	5.94	3.56	1.79	1.18	1.17	1.11	936
		Avg	5.01	3.85	2.36	1.21	0.85	1.30	7.00	6.00	3.59	1.76	1.18	1.17	1.11	926
64	50.00	18 L	5.02	3.95	2.25	1.16	0.86	1.27	6.98	6.26	3.55	1.70	1.26	1.12	1.11	848
		18 L	5.00	3.97	2.31	1.21	0.90	1.26	7.06	6.40	3.56	1.74	1.25	1.10	1.11	848
		Avg	5.01	3.96	2.28	1.19	0.88	1.27	7.02	6.33	3.56	1.72	1.26	1.11	1.11	848
65	52.00	18 L	4.96	3.70	2.28	1.21	0.88	1.34	7.06	5.90	3.55	1.72	1.29	1.20	1.12	955
		18 L	5.00	3.78	2.25	1.18	0.89	1.32	7.06	5.93	3.69	1.79	1.30	1.19	1.12	958
		Avg	4.98	3.74	2.27	1.20	0.89	1.33	7.06	5.92	3.62	1.76	1.30	1.19	1.12	956
66	54.00	18 L	4.98	3.52	2.15	1.29	1.01	1.41	7.02	5.45	3.26	1.92	1.38	1.29	1.12	1057
		18 L	4.96	3.53	2.17	1.26	0.96	1.41	6.98	5.44	3.24	1.91	1.45	1.28	1.12	1058
		Avg	4.97	3.53	2.16	1.28	0.99	1.41	7.00	5.45	3.25	1.92	1.42	1.29	1.12	1057
67	56.00	18 L	4.96	3.26	2.31	1.59	1.33	1.52	6.94	4.78	3.39	2.24	1.78	1.45	1.12	1303
		18 L	4.98	3.28	2.35	1.63	1.32	1.52	7.02	4.83	3.44	2.38	1.91	1.45	1.12	1316
		Avg	4.97	3.27	2.33	1.61	1.33	1.52	6.98	4.81	3.42	2.31	1.85	1.45	1.12	1309
68	58.00	18 L	5.04	3.46	2.25	1.40	1.12	1.46	6.98	5.09	3.39	2.07	1.58	-1.37	1.12	1190
		18 L	5.04	3.46	2.24	1.41	1.10	1.46	7.04	5.16	3.41	2.11	1.62	-1.36	1.12	1176
		Avg	5.04	3.46	2.25	1.41	1.11	1.46	7.01	5.13	3.40	2.09	1.60	1.37	1.12	1183

Table A-4 (Cont'd.)

TETERBORO FIELD DATA

NDT NO.	STATION	OFFSET ft	F1 kip	D1 (0) mil	D2(18) mil	D3(36) mil	D4(48) mil	S1 k/mil	F2 kip	D1 (0) mil	D2(18) mil	D3(36) mil	D4(48) mil	S2 k/mil	TCF	DSN kip/in
				ft	mil	mil	mil	k/mil	mil	mil	mil	mil	mil	mil	mil	mil
69	60.00	18 L	4.98	6.32	4.49	2.87	2.25	0.79	7.02	9.51	6.60	4.24	3.25	0.74	1.12	639
		18 L	5.00	6.39	4.33	2.83	2.21	0.78	6.94	9.45	6.65	4.24	3.22	0.73	1.12	634
	Avg	4.99	6.36	4.41	2.85	2.23	0.79	6.98	9.48	6.63	4.24	3.24	0.74	1.12	637	
70	62.00	18 L	4.98	5.03	3.29	1.90	1.45	0.99	6.94	7.81	5.13	2.94	2.17	0.89	1.12	705
71	64.00	18 L	4.96	4.64	3.04	1.75	1.28	1.07	7.02	7.28	4.65	2.69	1.97	0.96	1.12	780
		18 L	4.98	4.77	3.14	1.76	1.30	1.04	7.02	7.34	4.73	2.73	2.00	0.96	1.12	794
	Avg	4.97	4.71	3.09	1.76	1.29	1.06	7.02	7.31	4.69	2.71	1.99	0.96	1.12	787	
73	31.00	43 L	4.98	7.50	4.76	1.90	1.12	0.66	6.98	12.19	7.87	2.97	1.73	0.57	1.10	426
		43 L	5.02	7.84	5.24	2.04	1.17	0.64	6.94	12.27	8.17	3.10	1.69	0.57	1.10	433
	Avg	5.00	7.67	5.00	1.97	1.15	0.65	6.96	12.23	8.02	3.04	1.71	0.57	1.10	430	
74	33.00	43 L	5.00	6.89	4.28	1.97	1.19	0.73	7.00	11.01	6.71	3.16	1.87	0.64	1.10	485
		43 L	5.00	6.99	4.38	2.06	1.24	0.72	7.00	11.06	6.74	3.02	1.78	0.63	1.10	491
	Avg	5.00	6.94	4.33	2.02	1.22	0.72	7.00	11.04	6.73	3.09	1.83	0.63	1.10	488	
75	35.00	43 L	4.96	5.78	3.99	2.08	1.22	0.86	6.94	8.59	5.78	2.93	1.79	0.81	1.10	705
		43 L	5.02	5.85	4.01	2.03	1.22	0.86	7.00	8.79	5.93	3.00	1.84	0.80	1.10	673
	Avg	4.99	5.82	4.00	2.06	1.22	0.86	6.97	8.69	5.86	2.97	1.82	0.80	1.10	689	
76	37.15	43 L	5.02	6.96	4.49	2.21	1.33	0.72	7.02	10.81	6.99	3.57	2.15	0.65	1.10	519
		43 L	5.02	7.12	4.63	2.29	1.36	0.71	6.94	10.67	6.91	3.40	2.03	0.65	1.10	541
	Avg	5.02	7.04	4.56	2.25	1.35	0.71	6.98	10.74	6.95	3.49	2.09	0.65	1.10	530	
77	39.00	43 L	4.98	5.89	3.84	1.94	1.22	0.85	6.94	8.92	5.95	2.98	1.83	0.78	1.10	667
		43 L	5.04	6.05	3.99	2.04	1.28	0.83	6.96	9.05	5.98	2.98	1.82	0.77	1.10	640
	Avg	5.01	5.97	3.92	1.99	1.25	0.84	6.95	8.99	5.97	2.98	1.83	0.77	1.10	643	
78	41.00	43 L	5.00	5.03	3.36	1.90	1.27	0.99	6.98	7.60	5.01	2.84	1.87	0.92	1.10	770
		43 L	5.04	5.16	3.45	1.94	1.30	0.98	6.98	7.61	5.14	2.82	1.92	0.92	1.10	792
	Avg	5.02	5.10	3.41	1.92	1.29	0.99	6.98	7.61	5.08	2.83	1.90	0.92	1.10	781	
79	43.00	43 L	5.04	5.32	3.51	1.85	1.18	0.95	6.94	7.92	5.22	2.86	1.81	0.88	1.10	731
		43 L	4.96	5.31	3.54	1.86	1.19	0.93	7.04	8.28	5.42	2.86	1.84	0.85	1.10	700
	Avg	5.00	5.32	3.53	1.86	1.19	0.94	6.99	8.10	5.32	2.86	1.83	0.86	1.10	716	

Table A-4 (Cont'd.)

TETERBORO FIELD DATA

NDT NO.	STATION ft	OFFSET ft	F1	D1 (0) mil	D2(18) mil	D3(36) mil	D4(48) mil	S1 k/mil	F2	D1 (0) mil	D2(18) mil	D3(36) mil	D4(48) mil	S2 k/mil	TCF	DSM kip/in
			kip	mil	mil	mil	mil	kip	mil	mil	mil	mil	mil	kip	mil	
80	45.00	43 L	4.98	5.83	3.66	2.00	1.37	0.85	7.02	9.16	5.70	3.12	2.10	0.77	1.10	613
		43 L	5.04	6.04	3.70	2.02	1.38	0.83	6.96	9.03	5.68	3.05	1.95	0.77	1.10	642
		Avg	5.01	5.94	3.68	2.01	1.38	0.84	6.99	9.10	5.69	3.09	2.03	0.77	1.10	627
81	47.00	43 L	5.00	8.04	4.90	2.00	1.13	0.62	6.94	12.41	7.29	2.86	1.63	0.56	1.10	444
		43 L	5.00	8.24	4.88	1.96	1.06	0.61	7.00	12.74	7.08	2.92	1.58	0.55	1.10	444
		Avg	5.00	8.14	4.89	1.98	1.10	0.61	6.97	12.58	7.19	2.89	1.61	0.55	1.10	444
82	49.00	43 L	4.96	5.81	3.59	1.77	1.08	0.85	6.98	9.35	5.30	2.57	1.52	0.75	1.12	571
		43 L	5.00	5.97	3.75	1.82	1.10	0.84	6.94	9.29	5.77	2.80	1.57	0.75	1.12	584
		Avg	4.98	5.89	3.67	1.80	1.09	0.85	6.96	9.32	5.79	2.69	1.55	0.75	1.12	577
83	51.00	43 L	4.98	3.91	2.64	1.65	1.21	1.27	7.02	6.01	3.90	2.37	1.72	1.17	1.13	971
		43 L	4.96	4.00	2.70	1.63	1.19	1.24	7.04	6.12	3.92	2.37	1.74	1.15	1.13	981
		Avg	4.97	3.96	2.67	1.64	1.20	1.26	7.03	6.07	3.91	2.37	1.73	1.16	1.13	976
84	53.00	43 L	4.98	4.70	2.70	1.39	1.00	1.06	6.94	6.93	4.03	1.97	1.43	1.00	1.13	879
		43 L	4.96	4.64	2.76	1.40	1.03	1.07	6.94	6.87	4.06	2.03	1.49	1.01	1.13	888
		Avg	4.97	4.67	2.73	1.40	1.02	1.06	6.94	6.90	4.05	2.00	1.46	1.01	1.13	883
85	55.00	43 L	4.96	2.67	1.91	1.37	1.18	1.86	6.94	3.85	2.77	1.94	1.65	1.80	1.13	1678
		43 L	4.98	2.68	1.92	1.37	1.18	1.86	7.04	3.93	2.81	1.91	1.61	1.79	1.13	1648
		Avg	4.97	2.68	1.92	1.37	1.18	1.86	6.99	3.89	2.79	1.93	1.63	1.80	1.13	1663
86	57.00	43 L	4.98	3.72	2.67	1.74	1.35	1.34	7.00	5.52	3.76	2.49	1.98	1.27	1.13	1122
		43 L	4.98	3.74	2.69	1.76	1.36	1.33	6.96	5.48	3.95	2.54	1.98	1.27	1.13	1138
		Avg	4.98	3.73	2.68	1.75	1.36	1.34	6.98	5.50	3.86	2.52	1.98	1.27	1.13	1130
87	59.00	43 L	4.98	4.17	2.85	1.87	1.51	1.19	7.02	6.26	4.29	2.74	2.18	1.12	1.13	976
		43 L	5.00	4.21	2.92	1.91	1.52	1.19	6.96	6.28	4.36	2.79	2.18	1.11	1.13	947
		Avg	4.99	4.19	2.89	1.89	1.52	1.19	6.99	6.27	4.33	2.77	2.18	1.11	1.13	961
88	61.00	43 L	4.98	6.05	4.16	2.56	1.90	0.82	6.96	9.27	6.38	3.88	2.82	0.75	1.14	615
		43 L	5.00	6.21	4.33	2.67	1.94	0.81	7.00	9.39	6.51	3.95	2.83	0.75	1.14	629
		Avg	4.99	6.13	4.25	2.62	1.92	0.81	6.98	9.33	6.45	3.92	2.83	0.75	1.14	622

Table A-4 (Cont'd.)

TEREBORO FIELD DATA

NDT NO.	STATION	OFFSET ft	F1	D1 (0)	D2(18)	D3(36)	D4(48)	S1 mil	S2 mil	D2(18)	D1 (0)	D2(18)	D3(36)	D4(48)	S1 mil	S2 mil	DSM kip/in
			kip	mil	mil	mil	mil	k/mil	mil								
89	63.00	43 L	4.96	5.00	3.12	1.75	1.33	0.99	6.96	7.64	4.75	2.60	1.92	0.91	1.14	1.14	758
		43 L	4.96	5.06	3.28	1.82	1.29	0.98	6.96	7.58	4.64	2.58	1.91	0.92	1.14	1.14	786
Avg			4.96	5.03	3.20	1.79	1.31	0.99	6.95	7.61	4.70	2.59	1.92	0.91	1.14	1.14	772
90	65.00	43 L	5.00	5.07	3.13	1.73	1.27	0.99	6.96	7.67	4.67	2.56	1.84	0.91	1.14	1.14	754
		43 L	5.00	5.13	3.23	1.79	1.29	0.97	7.00	7.66	4.94	2.69	1.85	0.91	1.14	1.14	791
Avg			5.00	5.10	3.18	1.76	1.28	0.98	6.98	7.67	4.81	2.63	1.85	0.91	1.14	1.14	772
91	32.00	68 L	4.96	4.47	2.97	1.76	1.20	1.11	6.96	6.60	2.60	1.84	1.83	1.05	1.04	1.04	930
		68 L	4.98	4.51	3.06	1.82	1.21	1.10	6.98	6.70	2.53	2.67	1.83	1.04	1.04	1.04	913
Avg			4.97	4.49	3.02	1.79	1.21	1.11	6.96	6.65	3.57	2.26	1.83	1.05	1.05	1.05	921
92	34.00	68 L	5.00	3.38	2.38	1.38	0.98	1.48	6.96	4.92	3.47	2.11	1.43	1.41	1.41	1.41	1273
		68 L	5.00	3.38	2.39	1.42	1.03	1.48	7.00	4.95	3.49	2.14	1.50	1.41	1.41	1.41	1274
Avg			5.00	3.38	2.39	1.40	1.01	1.48	6.98	4.94	3.48	2.13	1.47	1.41	1.41	1.41	1273
93	36.00	68 L	5.00	3.92	2.75	1.67	1.16	1.28	6.98	5.80	3.89	2.38	1.67	1.20	1.20	1.20	1053
		68 L	4.96	3.94	2.78	1.65	1.16	1.26	6.98	5.82	4.03	2.44	1.72	1.20	1.20	1.20	1074
Avg			4.98	3.93	2.77	1.66	1.16	1.27	6.98	5.81	3.96	2.41	1.70	1.20	1.20	1.20	1064
94	38.00	68 L	5.02	3.68	2.61	1.71	1.28	1.36	7.06	5.45	3.90	2.52	1.78	1.29	1.29	1.29	1141
		68 L	5.00	3.69	2.66	1.70	1.26	1.36	7.02	5.50	3.95	2.42	1.77	1.28	1.28	1.28	1116
Avg			5.01	3.69	2.64	1.71	1.27	1.36	7.03	5.48	3.93	2.47	1.78	1.28	1.28	1.28	1129
95	40.00	68 L	4.96	4.29	2.91	1.70	1.23	1.16	7.00	6.37	4.27	2.57	1.77	1.10	1.10	1.10	981
		68 L	4.96	4.31	2.94	1.74	1.20	1.15	7.00	6.42	4.23	2.54	1.74	1.09	1.09	1.09	967
Avg			4.96	4.30	2.93	1.72	1.22	1.15	7.00	6.40	4.25	2.56	1.76	1.09	1.09	1.09	974
96	42.00	68 L	5.02	4.31	2.85	1.58	1.10	1.16	7.00	6.62	4.26	2.24	1.54	1.06	1.06	1.06	857
		68 L	5.02	4.39	2.88	1.58	1.11	1.14	7.02	6.59	4.20	2.27	1.56	1.07	1.07	1.07	909
Avg			5.02	4.35	2.87	1.58	1.11	1.15	7.01	6.61	4.23	2.26	1.55	1.06	1.06	1.06	833
97	44.00	68 L	5.00	5.35	3.50	1.80	1.15	0.93	7.06	8.24	5.40	2.79	1.66	0.86	1.11	1.11	713
		68 L	4.98	5.43	3.62	1.87	1.17	0.92	7.02	8.21	5.13	2.75	1.74	0.86	1.11	1.11	734
Avg			4.99	5.39	3.56	1.84	1.16	0.93	7.04	8.23	5.27	2.77	1.70	0.86	1.11	1.11	723
98	46.00	68 L	4.96	4.52	2.91	1.63	1.10	1.10	6.96	6.64	4.28	2.40	1.58	1.05	1.05	1.05	934
		68 L	5.00	4.62	2.94	1.65	1.11	1.08	6.94	6.73	4.33	2.40	1.61	1.03	1.03	1.03	919
Avg			4.98	4.57	2.93	1.64	1.11	1.09	6.94	6.69	4.31	2.40	1.60	1.04	1.04	1.04	927

Table A-4 (Cont'd.)

TETERBORO FIELD DATA

NOT NO.	STATION	OFFSET	F1	D1 (0)	D2(18)	D3(36)	D4(48)	S1	F2	D1 (0)	D2(18)	D3(36)	D4(48)	S2	DSM
			ft	ft	mil	mil	mil	k/mil	mil	kip	mil	mil	k/mil	kip/in	
99	48.00	68 L	5.00	4.53	2.78	1.48	0.97	1.10	7.04	6.88	4.39	2.19	1.44	1.02	1.11
		68 L	5.00	4.56	2.89	1.51	0.97	1.10	7.02	6.84	4.29	2.21	1.43	1.03	1.11
100	50.00	Avg	5.00	4.55	2.84	1.50	0.97	1.10	7.03	6.86	4.34	2.20	1.44	1.02	1.11
		L	4.98	5.05	3.20	1.70	1.19	0.99	6.94	7.81	4.99	2.59	1.73	0.89	1.13
101	52.00	Avg	4.97	5.09	3.25	1.73	1.18	0.98	6.99	7.92	4.88	2.55	1.70	0.88	1.13
		L	5.00	4.53	2.94	1.68	1.21	1.11	7.04	6.90	4.63	2.56	1.77	1.03	1.14
102	54.00	Avg	5.02	4.52	2.99	1.71	1.23	1.11	7.04	6.87	4.65	2.56	1.78	1.02	1.13
		L	5.00	3.98	2.57	1.55	1.16	1.26	6.96	5.91	3.81	2.29	1.68	1.18	1.14
103	56.00	Avg	4.99	4.00	2.61	1.57	1.15	1.25	6.97	5.93	3.83	2.29	1.67	1.02	1.14
		L	4.98	3.66	2.60	1.74	1.35	1.38	6.94	5.13	3.59	2.41	1.83	1.35	1.14
104	58.00	Avg	5.01	3.64	2.59	1.73	1.33	1.38	6.94	5.13	3.62	2.42	1.85	1.35	1.14
		L	5.00	3.37	2.35	1.53	1.19	1.48	6.96	4.88	3.33	2.18	1.68	1.43	1.14
105	60.00	Avg	4.99	3.38	2.37	1.55	1.21	1.48	6.99	4.89	3.45	2.26	1.71	1.43	1.14
		L	5.02	4.84	3.11	1.76	1.33	1.02	6.96	7.25	4.70	2.78	2.02	0.96	1.14
106	62.00	Avg	5.01	6.52	3.44	1.86	1.30	0.77	7.01	9.86	5.01	2.65	1.85	0.71	1.14
		L	5.00	6.47	3.46	1.86	1.29	0.78	7.02	9.80	4.85	2.60	1.84	0.72	1.14

LEESBURG FIELD DATA

TABLE A-5

NDT NO.	STATION ft	OF :SET ft	F1	D1 (0)	D2(18)	D3(30)	D4(42)	S1	F2	D1 (0)	D2(18)	D3(30)	D4(42)	S2	DSM kip/in
			kip	mil	mil	mil	mil	k/mil	kip	mil	mil	k/mil	mil	k/mil	kip/in
1	0.50	15L	5.00	8.36	3.40	0.41	0.16	0.60	6.98	14.19	5.68	0.57	0.22	0.49	340
			4.98	8.56	3.52	0.42	0.16	0.58	7.00	14.15	5.57	0.56	0.20	0.49	361
2	2.50	Avg	4.99	8.46	3.46	0.42	0.16	0.59	6.99	14.17	5.63	0.57	0.21	0.49	350
			5.00	8.00	2.72	0.21	0.03	0.63	7.04	13.38	4.42	0.32	0.08	0.53	379
3	4.50	Avg	4.98	7.95	2.70	0.21	0.03	0.63	7.01	13.37	4.34	0.32	0.07	0.52	374
			5.02	5.26	1.63	0.12	0.07	0.95	7.02	8.43	2.73	0.21	0.10	0.83	631
4	6.50	Avg	5.01	5.26	1.69	0.13	0.07	0.95	6.98	8.30	2.72	0.23	0.10	0.84	648
			5.02	10.30	4.13	0.83	0.21	0.48	6.96	17.96	7.30	1.21	0.28	0.39	258
5	8.50	Avg	4.99	10.53	4.25	0.84	0.20	0.47	6.95	17.73	7.08	1.24	0.28	0.39	273
			5.04	7.10	2.31	0.31	0.25	0.70	7.00	12.04	3.82	0.39	0.33	0.58	413
6	10.50	Avg	5.00	7.12	2.35	0.31	0.25	0.70	7.03	12.07	3.75	0.39	0.33	0.58	407
			5.04	8.33	3.44	0.55	0.04	0.62	6.96	13.79	5.48	0.86	0.07	0.51	344
7	12.50	Avg	5.02	8.19	3.36	0.53	0.04	0.61	6.97	13.68	5.49	0.86	0.09	0.51	356
			5.02	7.57	3.18	0.67	0.13	0.66	6.98	12.63	5.39	1.13	0.20	0.55	391
8	14.50	Avg	5.01	7.64	3.24	0.69	0.13	0.66	6.97	12.56	5.31	1.12	0.19	0.56	433
			5.02	6.59	2.95	0.59	0.04	0.76	7.02	11.30	4.79	0.95	0.06	0.62	452
9	16.50	Avg	5.00	6.70	2.96	0.60	0.05	0.75	7.03	11.29	4.78	0.96	0.07	0.62	443
			5.04	5.62	1.89	0.10	0.11	0.89	7.04	9.35	3.13	0.20	0.19	0.75	552
10	18.50	Avg	5.01	5.61	1.89	0.11	0.11	0.89	7.00	9.21	3.12	0.21	0.19	0.76	553
			4.98	10.06	4.61	2.16	1.39	0.50	7.00	17.03	7.38	3.39	2.16	0.41	290

Table A-5 (Cont'd.)

LEESBURG FIELD DATA

			NDT	STATION	OFFSET	F1	D1 (0)	D2(18)	D3(30)	D4(42)	S1	F2	D1 (0)	D2(18)	D3(30)	D4(42)	S2	DSM
			NO.	ft	ft	kip	mil	mil	mil	mil	k/mil	kip	mil	mil	mil	mil	k/mil	kip/in
11	20.50	15L	4.98	9.64	4.20	1.56	0.94	0.52	7.00	16.70	6.90	2.32	1.39	0.42	0.42	0.44	286	
			5.02	9.91	4.37	1.58	0.96	0.51	6.94	15.95	6.61	2.29	1.37	0.44	0.44	0.44	318	
		Avg	5.00	9.78	4.29	1.57	0.95	0.51	6.97	16.33	6.76	2.31	1.38	0.43	0.43	0.43	302	
19	1.00	5L	5.04	8.58	3.53	0.73	0.15	0.59	6.94	13.88	5.60	1.13	0.20	0.50	0.50	0.50	358	
		Avg	4.98	8.73	3.65	0.81	0.16	0.57	6.98	14.11	5.76	1.20	0.20	0.49	0.49	0.49	372	
		Avg	5.01	8.66	3.59	0.77	0.16	0.58	6.96	14.00	5.68	1.17	0.20	0.50	0.50	0.50	365	
20	2.05	5L	4.96	6.89	2.49	0.26	0.08	0.72	6.94	11.65	4.12	0.38	0.16	0.60	0.60	0.60	416	
		Avg	4.98	7.02	2.45	0.27	0.07	0.71	7.00	11.60	4.06	0.39	0.15	0.60	0.60	0.60	441	
		Avg	4.97	6.96	2.47	0.27	0.08	0.71	6.97	11.63	4.09	0.39	0.16	0.60	0.60	0.60	429	
21	3.00	5L	5.00	7.06	1.72	0.10	0.08	0.71	6.96	11.84	2.72	0.05	0.05	0.59	0.59	0.59	410	
		Avg	4.98	7.04	1.77	0.08	0.04	0.71	7.06	12.02	2.80	0.05	0.05	0.59	0.59	0.59	418	
		Avg	4.99	7.05	1.75	0.09	0.06	0.71	7.01	11.93	2.76	0.05	0.06	0.59	0.59	0.59	414	
22	4.10	5L	5.02	8.19	2.84	0.32	0.08	0.61	6.94	13.60	4.63	0.47	0.20	0.51	0.51	0.51	355	
		Avg	4.96	8.01	2.90	0.34	0.08	0.62	7.02	14.21	4.84	0.50	0.20	0.49	0.49	0.49	332	
		Avg	4.99	8.10	2.87	0.33	0.08	0.62	6.98	13.91	4.74	0.49	0.20	0.50	0.50	0.50	344	
23	5.00	5L	4.98	7.54	2.53	0.18	0.12	0.66	7.02	12.88	4.23	0.26	0.26	0.55	0.55	0.55	382	
		Avg	4.96	7.61	2.62	0.19	0.13	0.65	6.94	12.78	4.31	0.26	0.25	0.54	0.54	0.54	383	
		Avg	4.97	7.58	2.58	0.19	0.13	0.66	6.98	12.83	4.27	0.26	0.26	0.54	0.54	0.54	383	
24	6.00	5L	5.02	7.92	3.11	0.54	0.06	0.63	6.94	12.94	4.98	0.84	0.10	0.54	0.54	0.54	382	
		Avg	4.98	8.23	3.19	0.55	0.06	0.61	7.02	13.27	5.02	0.85	0.08	0.53	0.53	0.53	405	
		Avg	5.00	8.08	3.15	0.55	0.06	0.62	6.98	13.11	5.00	0.85	0.09	0.53	0.53	0.53	394	
25	7.00	5L	4.98	8.72	2.94	0.57	0.37	0.57	6.97	14.37	4.66	0.72	0.48	0.49	0.49	0.49	356	
		Avg	5.00	8.95	2.94	0.56	0.37	0.56	6.94	14.31	4.63	0.74	0.50	0.49	0.49	0.49	354	
		Avg	5.00	8.84	2.94	0.57	0.37	0.57	6.97	14.37	4.66	0.72	0.48	0.49	0.49	0.49	358	
26	8.00	5L	4.98	10.98	4.85	1.37	0.55	0.45	7.02	18.66	7.91	2.02	0.69	0.38	0.38	0.38	266	
		Avg	4.96	11.12	4.92	1.37	0.57	0.45	6.94	18.18	7.82	2.04	0.72	0.38	0.38	0.38	280	
		Avg	4.97	11.05	4.89	1.37	0.56	0.45	6.98	18.42	7.87	2.03	0.71	0.38	0.38	0.38	273	
27	9.00	5L	4.96	8.22	3.31	0.69	0.13	0.60	7.02	13.87	5.18	1.06	0.16	0.51	0.51	0.51	365	
		Avg	4.96	8.35	3.43	0.77	0.14	0.59	6.94	13.52	5.39	1.16	0.18	0.51	0.51	0.51	383	
		Avg	4.96	8.29	3.37	0.73	0.14	0.60	6.98	13.70	5.29	1.11	0.17	0.51	0.51	0.51	374	
28	10.00	5L	4.96	9.18	3.62	0.68	0.04	0.54	6.94	15.81	6.44	1.16	0.12	0.44	0.44	0.44	299	
		Avg	5.00	9.57	3.96	0.77	0.07	0.52	6.98	15.68	6.32	1.17	0.11	0.45	0.45	0.45	324	
		Avg	4.98	9.38	3.79	0.73	0.06	0.53	6.96	15.75	6.38	1.17	0.12	0.44	0.44	0.44	311	

Table A-5 (Cont.d)

LEESBURG FIELD DATA

NDT NO.	STATION	OFFSET ft	F1	D1 (0)	D2(18)	D3(30)	D4(42)	S1	F2	D1 (0)	D2(18)	D3(30)	D4(42)	S2	DSM kip/in
			kip	mil	mil	mil	mil	k/mil	kip	mil	mil	mil	mil	k/mil	
29	11.00	5L	5.00	7.43	2.91	0.59	0.10	0.67	7.06	12.44	4.63	0.90	0.15	0.57	411
		5L	5.00	7.58	3.10	0.62	0.09	0.66	7.00	12.03	4.83	0.93	0.15	0.58	449
30	12.00	5L	4.98	7.66	3.33	0.78	0.11	0.65	7.06	13.30	5.79	1.35	0.17	0.53	369
		5L	4.98	8.07	3.52	0.79	0.11	0.62	6.98	13.06	5.67	1.33	0.19	0.53	401
31	13.00	5L	4.98	8.55	3.12	0.78	0.34	0.58	7.02	13.18	5.73	1.34	0.18	0.53	385
		5L	4.98	8.76	3.31	0.81	0.35	0.57	7.06	14.80	5.04	1.10	0.44	0.47	326
32	14.00	5L	4.98	10.65	3.89	0.72	0.20	0.47	6.98	17.87	6.33	1.00	0.24	0.39	277
		5L	4.96	10.80	4.06	0.75	0.19	0.46	7.00	17.88	6.48	1.03	0.24	0.39	288
33	15.00	5L	5.02	8.89	3.08	0.65	0.29	0.56	6.94	14.91	4.99	0.91	0.37	0.47	319
		5L	4.96	8.90	3.18	0.65	0.26	0.56	7.04	15.14	5.07	0.96	0.38	0.46	333
34	16.00	5L	4.98	6.37	2.07	0.31	0.06	0.78	7.06	10.67	3.32	0.44	0.06	0.66	484
		5L	4.96	6.35	2.13	0.31	0.05	0.78	6.98	10.33	3.28	0.44	0.06	0.68	508
35	17.00	5L	4.97	6.36	2.10	0.31	0.06	0.78	7.02	10.50	3.30	0.44	0.06	0.67	496
		5L	4.96	6.87	2.26	0.26	0.05	0.72	7.00	11.64	3.79	0.44	0.12	0.60	428
36	18.00	5L	5.02	5.41	2.45	0.96	0.44	0.93	6.96	8.64	3.88	1.40	0.61	0.81	601
		5L	5.00	5.47	2.39	0.93	0.43	0.91	7.00	8.72	3.92	1.50	0.63	0.80	615
37	19.00	5L	4.96	8.81	4.74	2.34	1.48	0.56	6.94	14.45	7.60	3.57	2.17	0.48	351
		5L	4.96	8.93	4.96	2.44	1.49	0.56	7.04	14.46	7.60	3.45	2.12	0.49	376
38	20.00	5L	5.02	8.57	4.00	1.84	1.13	0.59	7.02	14.22	6.31	2.76	1.66	0.49	354
		5L	5.02	8.85	4.05	1.84	1.15	0.57	7.04	13.95	6.26	2.78	1.68	0.50	396
		Avg	5.02	8.71	4.03	1.84	1.14	0.58	7.03	14.09	6.29	2.77	1.67	0.50	375

Table A-5 (Cont'd.)

LEESBURG FIELD DATA

NDT NO.	STATION ft	OFFSET ft	F1	D1 (0)	D2(18)	D3(30)	D4(42)	S1	F2	D1 (0)	D2(18)	D3(30)	S2	
			mil	mil	mil	mil	mil	k/mil	mil	k/mil	mil	k/mil	mil	
39	21.00	5L	4.96	8.23	4.12	1.90	1.15	0.60	6.98	13.41	6.30	2.80	1.61	
			5.00	8.40	4.14	1.86	1.12	0.60	6.94	13.29	6.28	2.76	1.62	
			Avg	4.98	8.32	4.13	1.88	1.14	0.60	6.96	13.35	6.29	2.78	1.62
56	1.50	5R	4.98	8.35	3.18	0.59	0.10	0.60	7.02	14.31	5.34	0.85	0.12	0.49
			5.00	8.76	3.50	0.65	0.10	0.57	7.00	14.33	5.21	0.86	0.12	0.49
			Avg	4.99	8.56	3.34	0.62	0.10	0.58	7.01	14.32	5.28	0.86	0.12
55	2.50	5R	5.04	7.80	2.67	0.35	0.04	0.64	6.94	12.59	4.23	0.48	0.08	0.55
			4.98	7.95	2.82	0.36	0.04	0.63	6.96	12.63	4.15	0.50	0.06	0.55
			Avg	5.01	7.93	2.75	0.36	0.04	0.63	6.95	12.61	4.19	0.49	0.07
56	3.50	5R	4.96	7.25	2.66	0.50	0.12	0.68	6.94	11.88	4.23	0.69	0.15	0.58
			5.04	7.39	2.74	0.53	0.12	0.68	6.96	12.14	4.44	0.77	0.14	0.57
			Avg	5.00	7.32	2.70	0.52	0.12	0.68	6.95	12.01	4.34	0.73	0.15
57	4.50	5R	5.02	9.09	3.31	0.43	0.05	0.55	6.94	15.32	5.37	0.65	0.15	0.45
			5.00	9.30	3.54	0.49	0.06	0.54	7.00	15.52	5.69	0.69	0.15	0.45
			Avg	5.01	9.20	3.43	0.46	0.06	0.54	6.97	15.42	5.53	0.67	0.15
58	5.50	5R	4.96	7.83	2.85	0.38	0.05	0.63	7.00	13.15	4.79	0.60	0.09	0.53
			5.00	8.13	3.04	0.42	0.05	0.62	6.98	13.06	4.70	0.60	0.08	0.53
			Avg	4.98	7.98	2.95	0.40	0.05	0.62	6.99	13.11	4.75	0.60	0.09
59	6.50	5R	4.98	9.06	3.56	0.45	0.08	0.55	7.00	15.75	5.81	0.73	0.20	0.44
			5.00	9.28	3.72	0.48	0.09	0.54	6.94	15.54	6.04	0.77	0.19	0.45
			Avg	4.99	9.17	3.64	0.47	0.09	0.54	6.97	15.65	5.93	0.75	0.20
60	7.50	5R	4.98	9.87	3.86	0.85	0.40	0.50	7.02	16.36	6.19	1.17	0.48	0.43
			4.98	9.92	3.91	0.85	0.37	0.50	6.98	16.23	6.34	1.21	0.47	0.43
			Avg	4.98	9.90	3.89	0.85	0.39	0.50	7.00	16.30	6.27	1.19	0.48
61	8.50	5R	4.96	11.86	4.92	1.08	0.22	0.42	6.98	20.00	8.03	1.54	0.29	0.35
			4.98	11.90	4.98	1.10	0.22	0.42	6.94	20.00	8.16	1.54	0.30	0.35
			Avg	4.97	11.88	4.95	1.09	0.22	0.42	6.96	20.00	8.10	1.54	0.30
62	9.50	5R	5.00	9.66	3.78	0.80	0.15	0.52	6.98	16.47	6.70	1.32	0.17	0.42
			4.98	9.69	4.00	0.86	0.14	0.51	7.06	16.62	6.70	1.31	0.20	-0.42
			Avg	4.99	9.67	3.89	0.83	0.15	0.52	7.02	16.55	6.70	1.32	0.19

Table A-5 (Cont'd.)

LEESBURG FIELD DATA

NDT NO.	STATION ft.	OFFSET ft.	F1	D1 (0) kip mil	D2(18) mil	D3(30) mil	D4(42) mil	S1 k/mil	F2	D1 (0) kip mil	D2(18) mil	D3(30) mil	D4(42) mil	S2 k/mil	DSM kip/in
63	10.50	5R	4.98	9.39	4.27	1.25	0.28	0.53	7.04	16.13	7.26	1.99	0.42	0.44	306
			4.96	9.63	4.49	1.30	0.29	0.52	7.06	16.15	7.46	2.10	0.42	0.44	322
64	11.50	Avg	4.97	9.51	4.38	1.28	0.29	0.52	7.05	16.14	7.36	2.05	0.42	0.44	314
		5R	5.04	7.48	2.91	0.48	0.04	0.67	7.02	12.41	4.74	0.79	0.06	0.57	402
65	12.50	5R	5.02	7.66	3.42	0.96	0.26	0.66	6.96	12.24	5.42	1.54	0.38	0.57	424
			4.96	7.68	3.35	0.97	0.26	0.65	7.00	12.47	5.57	1.50	0.38	0.56	426
66	13.50	Avg	4.99	7.67	3.39	0.97	0.26	0.65	6.98	12.36	5.50	1.52	0.38	0.56	415
		5R	4.96	8.88	2.88	0.74	0.38	0.56	6.98	15.56	4.71	1.03	0.49	0.45	303
67	14.50	Avg	4.96	9.09	2.98	0.75	0.37	0.55	7.01	15.63	4.77	1.03	0.49	0.45	425
		5R	4.96	13.02	4.47	0.51	0.15	0.38	3.02	6.53	2.20	0.35	0.16	0.46	299
68	15.50	5R	4.96	7.59	2.14	0.36	0.16	0.65	7.02	13.47	3.58	0.55	0.23	0.52	350
			4.98	7.90	2.24	0.39	0.17	0.63	7.04	13.37	3.52	0.54	0.23	0.53	377
69	16.50	Avg	4.97	7.75	2.19	0.38	0.17	0.64	7.03	13.42	3.55	0.55	0.23	0.52	363
		5R	5.02	7.96	1.79	0.10	0.18	0.63	7.00	13.37	2.88	0.30	0.35	0.52	366
70	17.50	Avg	5.02	8.01	1.88	0.11	0.19	0.63	7.03	13.49	2.92	0.30	0.36	0.52	368
		5R	5.04	6.10	1.65	0.15	0.05	0.81	6.94	10.09	2.56	0.18	0.04	0.69	496
71	18.50	Avg	5.00	6.17	1.68	0.15	0.06	0.81	6.97	10.11	2.60	0.19	0.04	0.69	503
		5R	4.96	8.35	3.42	1.16	0.53	0.59	7.04	14.34	5.76	1.67	0.75	0.49	347
72	19.50	Avg	4.96	8.42	3.47	1.18	0.54	0.59	7.00	14.23	5.74	1.72	0.77	0.49	355
		5R	5.04	11.73	4.98	2.01	1.17	0.43	7.04	20.00	8.38	3.15	1.72	0.35	242
73	20.50	Avg	5.04	11.84	5.19	2.08	1.17	0.43	7.03	20.00	8.36	3.16	1.72	0.35	244
		5R	5.04	10.26	4.76	1.79	1.02	0.48	6.98	17.36	7.61	2.58	1.35	0.40	284
73	20.50	Avg	5.00	10.41	4.81	1.80	0.99	0.48	6.97	17.46	7.44	2.58	1.37	0.40	275

Table A-5 (Cont'd.)

LEESBURG FIELD DATA

NDT NO.	STATION ft	OFFSET ft	F1	D1 (0) mil	D2(18) mil	D3(30) mil	D4(42) mil	S1 k/mil	F2	D1 (0) mil	D2(18) mil	D3(30) mil	D4(42) mil	S2 k/mil	DSM kip/in
			kip	mil	mil	mil	mil	mil	kip	mil	mil	mil	mil	mil	kip/in
96	17.50	15R	5.00	6.87	2.02	0.09	0.04	0.73	7.06	11.65	3.35	0.10	0.09	0.61	431
			5.02	6.80	2.02	0.09	0.06	0.74	6.98	11.21	3.32	0.11	0.09	0.62	444
97	19.50	15R	4.96	11.15	4.21	1.41	1.04	0.44	6.96	18.32	6.89	2.01	1.46	0.38	279
			4.98	10.76	4.27	1.47	1.05	0.46	6.98	18.05	6.79	2.05	1.43	0.39	274
98	21.50	15R	4.97	10.96	4.24	1.44	1.05	0.45	6.97	18.19	6.84	2.03	1.45	0.38	277
			4.98	8.83	4.13	1.43	0.95	0.56	7.04	15.28	7.01	2.21	1.31	0.46	319
12	22.50	15L	5.00	7.57	3.51	1.50	1.00	0.66	7.02	11.83	5.20	2.10	1.39	0.59	474
			5.00	7.55	3.62	1.54	1.00	0.66	6.94	11.72	5.37	2.16	1.41	0.59	465
13	24.50	15L	5.00	10.09	5.44	2.47	1.21	0.50	7.02	17.01	8.94	3.89	1.83	0.41	292
			5.00	10.13	5.71	2.50	1.20	0.49	6.96	16.43	8.63	3.69	1.79	0.42	311
14	26.50	15L	4.96	10.99	5.49	2.28	1.19	0.45	7.04	18.99	9.35	3.61	1.82	0.37	260
			5.00	11.32	5.74	2.34	1.16	0.44	6.94	18.64	8.75	3.58	1.71	0.37	265
15	28.50	15L	5.00	5.60	2.15	0.46	0.19	0.89	7.04	9.15	3.34	0.67	0.24	0.77	575
			5.00	5.52	2.21	0.45	0.18	0.91	7.04	9.02	3.52	0.67	0.24	0.78	583
16	30.50	15L	5.00	8.57	3.53	0.74	0.17	0.58	6.98	14.39	5.88	1.33	0.23	0.47	322
			5.02	8.57	3.60	0.79	0.18	0.59	6.98	14.39	5.88	1.23	0.24	0.49	337
17	32.50	15L	4.96	9.02	4.00	1.68	1.07	0.55	7.01	15.02	6.63	2.52	1.56	0.47	341
			4.98	9.01	4.10	1.74	1.10	0.55	7.06	15.14	6.70	2.49	1.54	0.47	340
18	34.50	15L	5.04	6.17	2.65	1.21	0.84	0.82	7.02	9.59	4.19	1.79	1.23	0.73	579
			4.96	6.20	2.69	1.21	0.82	0.80	7.02	9.83	4.12	1.77	1.23	0.71	567
40	22.25	5L	5.02	6.79	3.44	1.58	0.93	0.76	7.04	10.88	5.46	2.29	1.37	0.65	494
			4.96	6.68	3.52	1.61	0.93	0.74	6.98	10.55	5.38	2.44	1.36	0.66	522
AVG	4.99	6.74	3.48	1.60	0.93	0.74	0.71	10.72	5.42	2.37	1.37	0.65	508		

Table A-5 (Cont'd.)

LEESBURG FIELD DATA

NDT NO.	STATION	OFFSET ft	F1	D1 (0)	D2(18)	D3(30)	D4(42)	S1	F2	D1 (0)	D2(18)	D3(30)	D4(42)	S2	DSM
			kip	mil	mil	mil	mil	k/mil	kip	mil	mil	k/mil	kip	mil	k/mil
41	23.00	5L	4.98	7.29	3.67	1.82	1.22	0.68	7.00	11.68	5.97	2.80	1.74	0.60	460
			5.02	7.48	3.85	1.87	1.26	0.67	6.98	11.50	5.70	2.64	1.72	0.61	488
Avg	5.00	7.39	3.76	1.85	1.24	0.68	0.69	11.59	5.84	2.72	1.73	0.60	474		
42	24.00	5L	4.96	8.74	4.33	1.99	1.27	0.57	6.96	14.61	6.89	3.02	1.83	0.48	341
			5.02	9.04	4.56	2.09	1.33	0.56	6.98	14.90	7.40	3.23	1.85	0.47	334
Avg	4.99	8.89	4.45	2.04	1.30	0.56	0.97	14.76	7.15	3.13	1.84	0.47		338	
43	25.00	5L	5.00	8.00	4.10	1.93	1.20	0.63	7.02	13.39	6.69	2.91	1.81	0.52	375
			4.96	8.21	4.26	1.98	1.20	0.60	7.02	13.42	6.81	2.85	1.71	0.52	395
Avg	4.98	8.11	4.18	1.96	1.20	0.61	0.61	7.02	13.41	6.75	2.88	1.76	0.52		385
44	26.00	5L	5.02	9.42	5.07	2.27	1.19	0.53	7.04	16.08	8.34	3.66	1.83	0.44	303
			5.00	9.84	5.23	2.29	1.19	0.51	7.00	16.03	8.39	3.52	1.67	0.44	323
Avg	5.01	9.63	5.15	2.28	1.19	0.52	0.52	7.02	16.06	8.37	3.59	1.75	0.44		313
45	27.00	5L	4.96	9.63	5.15	2.44	1.32	0.52	6.96	16.33	8.61	3.65	1.89	0.43	299
			5.02	10.18	5.50	2.49	1.32	0.49	6.98	16.34	8.84	3.68	1.98	0.43	318
Avg	4.99	9.91	5.33	2.47	1.32	0.50	0.97	16.34	8.73	3.67	1.94	0.43		308	
46	28.00	5L	5.04	7.20	3.23	1.06	0.48	0.70	6.96	11.68	5.15	1.59	0.66	0.60	429
			4.98	7.23	3.27	1.06	0.50	0.69	6.96	11.81	5.08	1.56	0.66	0.59	432
Avg	5.01	7.22	3.25	1.06	0.49	0.69	0.69	11.75	5.12	1.58	0.66	0.59		430	
47	29.00	5L	5.02	7.46	3.51	1.16	0.45	0.67	6.96	12.12	5.54	1.78	0.63	0.57	416
			5.02	7.30	3.38	1.12	0.44	0.69	6.98	12.18	5.53	1.86	0.64	0.57	402
Avg	5.02	7.38	3.45	1.14	0.45	0.68	0.97	12.15	5.54	1.82	0.64	0.57		409	
48	30.00	5L	4.98	8.49	4.02	1.28	0.39	0.59	6.94	14.61	6.62	2.10	0.62	0.48	320
			4.98	8.60	4.24	1.40	0.40	0.58	7.04	14.81	7.13	2.25	0.65	0.48	332
Avg	4.98	8.55	4.13	1.34	0.40	0.58	0.99	14.71	6.88	2.18	0.64	0.48		326	
49	31.00	5L	5.04	8.70	4.28	1.48	0.62	0.58	7.06	14.36	6.69	2.27	0.90	0.49	357
			4.98	8.64	4.34	1.53	0.60	0.58	6.94	14.38	6.88	2.30	0.90	0.48	341
Avg	5.01	8.67	4.31	1.51	0.61	0.58	0.70	14.37	6.79	2.29	0.90	0.49		349	
50	32.00	5L	5.02	7.12	3.10	1.06	0.47	0.71	7.06	12.07	5.00	1.65	0.69	0.58	412
			5.00	7.29	3.28	1.12	0.48	0.69	6.98	11.96	5.17	1.75	0.71	0.58	424
Avg	5.01	7.21	3.19	1.09	0.48	0.70	0.70	12.02	5.09	1.70	0.70	0.58		418	

Table A-5 (Cont'd.)

LEESBURG FIELD DATA

NO. NO.	STATION	OFFSET ft	F1 mil	D1 (0) kip	D2(18) mil	D3(30) mil	D4(42) mil	S1 k/mil	F2 mil	D1 (0) kip	D2(18) mil	D3(30) mil	D4(42) mil	S2 k/mil	DSM kip/in
51	33.00	SL	4.98	6.93	3.49	1.90	1.32	0.72	7.00	11.30	5.61	2.89	2.01	0.62	462
			5.02	6.88	3.60	1.88	1.30	0.73	7.00	11.29	5.58	2.87	1.96	0.62	449
	Avg		5.00	6.91	3.55	1.89	1.31	0.72	7.00	11.30	5.60	2.88	1.98	0.62	456
52	34.00	SL	5.00	8.45	4.37	2.17	1.42	0.59	7.02	14.18	7.20	3.50	2.14	0.50	353
			4.98	8.52	4.42	2.18	1.43	0.58	6.98	13.87	7.09	3.35	2.05	0.50	374
	Avg		4.99	8.49	4.40	2.18	1.43	0.59	7.00	14.03	7.15	3.43	2.10	0.50	363
75	22.50	SR	4.96	6.69	3.11	1.36	0.87	0.74	6.96	10.94	4.92	1.92	1.20	0.64	471
			4.96	6.78	3.18	1.39	0.87	0.73	7.02	10.99	5.08	2.07	1.23	0.64	489
	Avg		4.96	6.74	3.15	1.38	0.87	0.74	6.99	10.97	5.00	1.99	1.22	0.64	480
76	23.50	SR	4.96	8.06	4.27	2.21	1.43	0.62	7.00	13.25	6.73	3.45	2.15	0.53	393
			5.02	8.29	4.28	2.28	1.48	0.61	6.94	13.29	6.80	3.37	2.10	0.52	384
	Avg		4.99	8.18	4.28	2.25	1.46	0.61	6.97	13.27	6.77	3.41	2.13	0.53	389
77	24.50	SR	5.02	8.40	4.05	1.89	1.20	0.60	7.00	13.70	6.52	2.99	1.74	0.51	374
			5.02	8.17	4.09	1.90	1.14	0.61	7.00	13.41	6.80	3.06	1.68	0.52	378
	Avg		5.02	8.29	4.07	1.90	1.17	0.61	7.00	13.56	6.66	3.03	1.71	0.52	376
78	25.50	SR	5.02	9.38	5.32	2.62	1.66	0.54	6.98	15.30	8.50	4.24	2.52	0.46	331
			4.98	9.28	5.30	2.77	1.70	0.54	6.98	15.45	8.12	4.03	2.50	0.45	324
	Avg		5.00	9.33	5.31	2.70	1.68	0.54	6.98	15.38	8.31	4.14	2.51	0.45	328
79	26.50	SR	5.02	8.98	4.68	2.10	1.21	0.56	6.98	15.00	7.62	3.34	1.81	0.47	326
			5.00	9.01	4.88	2.24	1.20	0.55	7.06	15.10	7.78	3.21	1.73	0.47	338
	Avg		5.01	9.00	4.78	2.17	1.21	0.56	7.02	15.05	7.70	3.28	1.77	0.47	332
80	27.50	SR	4.96	7.97	3.88	1.80	1.04	0.62	6.98	13.22	6.63	2.92	1.63	0.53	389
			4.96	8.06	4.11	1.96	1.11	0.62	7.00	13.46	6.67	2.94	1.59	0.66	400
	Avg		5.03	8.02	4.00	1.88	1.08	0.62	6.98	13.22	6.63	2.92	1.63	0.53	389
81	28.50	SR	5.02	5.80	2.70	1.05	0.46	0.87	7.06	9.45	4.37	1.56	0.64	0.75	559
			5.04	5.95	2.69	1.02	0.45	0.85	6.96	9.30	4.39	1.59	0.66	0.75	573
	Avg		5.03	5.88	2.70	1.04	0.46	0.86	7.01	9.38	4.38	1.58	0.65	0.75	566
82	29.50	SR	5.02	6.65	2.96	0.86	0.17	0.75	7.06	11.38	5.13	1.48	0.24	0.62	431
			5.02	6.73	3.15	0.89	0.16	0.75	6.94	11.00	5.11	1.47	0.26	0.63	450
	Avg		5.02	6.69	3.06	0.88	0.17	0.75	7.00	11.19	5.12	1.48	0.25	0.63	440

Table A-5 (Cont'd.)
LEESBURG FIELD DATA

NDT NO.	STATION	OFFSET ft	F1 kip	D1 (0)	D2(18)	D3(30)	D4(42)	S1 mil	F2 kip	D1 (0)	D2(18)	D3(30)	D4(42)	S2 mil	D2 k/mil	D3 k/mil	D4 k/mil	D5 kip/in
				mil	mil	mil	mil	kip	mil	mil	mil	mil	mil	kip	mil	mil	mil	kip
74	21.50	5R	5.00	8.89	3.80	1.70	1.08	0.56	6.96	14.78	6.18	2.55	1.60	0.47	333			
			4.96	9.03	3.93	1.66	1.06	0.55	7.04	14.89	6.07	2.54	1.55	0.47	355			
53	0.50	AUG	4.98	8.96	3.87	1.68	1.07	0.56	7.00	14.84	6.13	2.55	1.58	0.47	344			
			5.00	8.48	1.78	0.04	0.02	0.59	7.02	13.75	2.70	0.16	0.05	0.51	383			
88	1.50	15R	5.02	8.49	1.79	0.05	0.03	0.59	7.02	13.75	2.70	0.17	0.06	0.51	376			
			4.96	6.91	2.13	0.09	0.09	0.72	7.00	11.55	3.53	0.13	0.17	0.61	435			
89	3.50	AUG	4.97	6.97	2.17	0.09	0.09	0.71	7.01	11.60	3.45	0.13	0.17	0.60	446			
			5.02	8.89	2.37	0.14	0.04	0.56	6.98	15.46	4.17	0.18	0.09	0.45	298			
90	5.50	AUG	4.99	9.03	2.46	0.16	0.04	0.55	6.98	15.50	4.09	0.19	0.08	0.45	308			
			5.00	8.72	2.87	0.06	0.16	0.57	6.96	14.58	4.54	0.15	0.29	0.48	341			
91	7.50	AUG	4.98	8.79	2.94	0.07	0.16	0.57	6.95	14.63	4.82	0.17	0.30	0.48	337			
			4.98	11.94	4.64	0.88	0.41	0.42	7.06	20.00	7.77	1.30	0.64	0.35	258			
92	9.50	AUG	4.98	11.82	4.57	0.88	0.40	0.42	7.00	20.00	7.64	1.30	0.64	0.35	247			
			5.04	9.12	4.25	1.00	0.16	0.56	7.02	14.98	6.49	1.58	0.24	0.47	332			
93	11.50	AUG	5.01	8.98	4.14	1.02	0.17	0.56	6.99	14.84	6.64	1.67	0.60	0.17	442			
			5.04	7.11	2.61	0.34	0.10	0.71	7.00	11.68	4.47	0.61	0.17	0.60	429			
94	13.50	AUG	5.02	7.17	2.71	0.35	0.10	0.70	6.98	11.60	4.37	0.60	0.17	0.60	446			
			5.00	9.18	2.54	0.45	0.18	0.54	7.00	15.73	3.99	0.57	0.24	0.45	305			
95	15.50	AUG	5.01	6.88	2.31	0.38	0.19	0.73	6.98	11.22	3.95	0.60	0.25	0.62	457			
			5.02	6.87	2.29	0.38	0.19	0.73	7.02	11.42	3.90	0.58	0.26	0.61	440			

Table A-5 (Cont'd.)

LEESBURG FIELD DATA

	NDT	STATION	OFFSET ft	F1 kip	D1 (0) mil	D2(18) mil	D3(30) mil	D4(42) mil	S1 k/mil	F2 kip	D1 (0) mil	D2(18) mil	D3(30) mil	D4(42) mil	S2 k/mil	DSM kip/in
83	30.50	5R	5.00	6.86	2.95	0.57	0.04	0.73	7.00	11.57	4.77	0.93	0.09	0.61	425	
			4.96	6.73	2.99	0.60	0.04	0.74	7.06	11.57	5.02	0.98	0.10	0.61	434	
	Avg		4.98	6.80	2.97	0.59	0.04	0.73	7.03	11.57	4.90	0.96	0.10	0.61	429	
84	31.50	5R	5.02	5.77	2.43	0.97	0.55	0.87	6.99	9.58	4.10	1.55	0.82	0.73	517	
			5.00	5.87	2.58	1.01	0.56	0.85	6.98	9.47	3.89	1.46	0.76	0.74	550	
	Avg		5.01	5.82	2.51	0.99	0.56	0.86	6.99	9.53	4.00	1.51	0.79	0.73	534	
85	32.50	5R	4.98	6.88	3.26	1.30	0.69	0.72	7.04	11.40	5.37	2.05	0.97	0.62	456	
			4.98	6.96	3.38	1.35	0.68	0.72	7.06	11.43	5.38	2.05	1.00	0.62	465	
	Avg		4.98	6.92	3.32	1.33	0.69	0.72	7.05	11.42	5.38	2.00	0.99	0.62	461	
86	33.50	5R	5.00	5.29	2.74	1.43	1.02	0.95	6.94	8.46	4.32	2.14	1.40	0.82	612	
			4.98	5.41	2.80	1.44	0.97	0.92	6.94	8.65	4.32	2.14	1.43	0.80	605	
	Avg		4.99	5.35	2.77	1.44	1.00	0.93	6.94	8.56	4.32	2.14	1.42	0.81	608	
87	34.25	5R	4.96	6.88	3.78	2.02	1.40	0.72	6.98	11.00	6.00	3.05	1.99	0.63	490	
			4.98	7.07	3.92	2.01	1.39	0.70	7.02	11.35	5.88	3.00	2.01	0.62	477	
	Avg		4.97	6.98	3.85	2.02	1.40	0.71	7.00	11.18	5.94	3.03	2.00	0.63	483	
99	23.50	15L	5.00	8.84	4.53	1.95	1.22	0.57	6.95	14.04	7.32	2.92	1.74	0.50	375	
			4.96	8.70	4.49	1.95	1.21	0.57	6.98	14.33	7.30	2.99	1.77	0.49	359	
	Avg		4.97	8.77	4.51	1.95	1.22	0.57	6.97	14.19	7.31	2.96	1.76	0.49	367	
100	25.50	15L	4.96	10.26	5.25	2.41	1.55	0.48	7.00	16.86	8.46	3.62	2.24	0.42	309	
			4.96	10.41	5.59	2.53	1.53	0.48	7.00	17.06	8.84	3.57	2.20	0.41	307	
	Avg		4.96	10.34	5.42	2.47	1.54	0.48	7.00	16.96	8.65	3.60	2.22	0.41	308	
101	27.50	15L	4.98	10.63	5.16	1.95	0.90	0.47	7.00	18.06	8.38	2.98	1.32	0.39	272	
			4.98	11.10	5.42	2.02	0.90	0.45	7.02	18.33	8.72	2.92	1.28	0.38	282	
	Avg		4.98	10.87	5.29	1.99	0.90	0.46	7.01	18.20	8.55	2.95	1.30	0.39	277	
102	29.50	15L	5.02	6.93	2.94	0.54	0.02	0.72	6.94	11.63	5.03	0.92	0.06	0.60	409	
			4.96	6.85	2.96	0.55	0.05	0.72	7.02	11.74	5.02	0.90	0.06	0.60	421	
	Avg		4.99	6.89	2.95	0.55	0.04	0.72	6.98	11.69	5.03	0.91	0.06	0.60	415	
103	31.50	15L	4.96	9.57	3.75	0.81	0.24	0.52	7.02	16.87	6.45	1.17	0.31	0.42	282	
			4.96	9.56	3.71	0.80	0.24	0.52	6.98	16.14	6.58	1.24	0.31	0.43	307	
	Avg		4.96	9.57	3.73	0.81	0.24	0.52	7.00	16.51	6.52	1.21	0.31	0.42	295	
104	33.50	15L	5.00	7.90	3.62	1.67	1.22	0.63	7.00	13.01	5.76	2.42	1.72	0.54	391	
			5.02	8.00	3.73	1.72	1.25	0.63	7.06	13.21	5.93	2.36	1.68	0.53	392	
	Avg		5.01	7.95	3.68	1.70	1.24	0.63	7.03	13.11	5.85	2.39	1.70	0.54	391	

OCEAN CITY FIELD DATA - TERMINAL APRON

TABLE A-6

NDT NO.	STATION ft	OFFSET ft	F1	D1(0)	D2(18)	D3(36)	D4(48)	S1	F2	D1(0)	D2(18)	D3(36)	S2	DSM
			kip	mil	mil	mil	mil	k/mil	kip	mil	mil	k/mil	k/in	
1	49.50	105 R	4.98	7.58	4.04	1.50	0.87	0.66	7.02	11.88	6.00	2.22	1.30	0.59
	49.50	105 R	5.02	7.67	4.23	1.56	0.88	0.65	6.96	11.60	5.92	2.28	1.31	0.60
	Avg	5.00	7.63	4.14	1.53	0.88	0.66	6.99	11.74	5.96	2.25	1.31	0.60	484
2	49.00	105 R	4.98	7.41	4.73	2.84	1.97	0.67	6.96	10.61	6.93	4.11	2.90	0.66
	49.00	105 R	5.00	7.23	4.63	2.74	1.95	0.69	6.96	10.84	6.93	4.10	2.82	0.64
	Avg	4.99	7.32	4.68	2.79	1.96	0.68	6.96	10.73	6.93	4.11	2.86	0.65	581
3	48.50	105 R	4.96	7.66	4.87	2.49	1.57	0.65	7.02	11.79	7.39	3.64	2.20	0.60
	48.50	105 R	5.04	7.85	4.91	2.50	1.53	0.64	6.98	11.65	7.23	3.76	2.26	0.60
	Avg	5.00	7.76	4.89	2.50	1.55	0.64	7.00	11.72	7.31	3.70	2.23	0.60	505
4	48.00	105 R	5.04	10.62	5.15	1.97	1.15	0.47	6.94	16.42	7.96	3.04	1.70	0.42
	48.00	105 R	5.04	10.76	5.29	2.00	1.13	0.47	7.02	17.02	8.13	3.01	1.73	0.41
	Avg	5.04	10.69	5.22	1.99	1.14	0.47	6.98	16.72	8.05	3.03	1.72	0.42	322
5	47.50	105 R	5.02	8.91	4.89	2.41	1.30	0.56	6.96	13.57	7.70	3.59	1.89	0.51
	47.50	105 R	4.96	8.93	5.21	2.51	1.31	0.56	6.98	13.53	7.72	3.73	1.95	0.52
	Avg	4.99	8.92	5.05	2.46	1.31	0.56	6.97	13.55	7.71	3.66	1.92	0.51	416
6	47.00	105 R	5.00	8.75	5.48	2.51	1.46	0.57	6.98	13.36	7.84	3.57	2.15	0.52
	47.00	105 R	4.96	8.63	5.36	2.46	1.46	0.57	6.94	13.37	8.25	3.54	2.14	0.52
	Avg	4.99	8.69	5.42	2.49	1.46	0.57	6.96	13.37	8.05	3.56	2.15	0.52	439
7	46.50	105 R	5.04	6.76	4.04	1.64	0.92	0.75	7.00	10.30	6.17	2.36	1.30	0.68
	46.50	105 R	4.96	6.81	4.11	1.66	0.97	0.73	6.98	10.50	6.12	2.49	1.37	0.66
	Avg	5.00	6.79	4.08	1.65	0.95	0.74	6.99	10.40	6.15	2.43	1.34	0.67	551
8	46.00	105 R	5.00	6.25	3.89	2.03	1.27	0.80	6.94	9.22	6.02	3.13	1.89	0.75
	46.00	105 R	4.98	6.28	4.05	2.12	1.31	0.79	6.94	9.39	6.06	3.16	1.91	0.74
	Avg	4.99	6.27	3.97	2.08	1.29	0.80	6.94	9.31	6.04	3.15	1.90	0.75	642
9	45.50	105 R	5.00	7.34	3.98	2.03	1.20	0.68	7.06	11.39	6.03	3.04	1.83	0.62
	45.50	105 R	4.98	7.38	3.95	1.98	1.17	0.67	6.94	11.13	6.12	3.09	1.78	0.62
	Avg	4.99	7.36	3.97	2.01	1.19	0.68	7.00	11.26	6.08	3.07	1.81	0.62	516
10	49.25	93 R	5.00	8.65	3.62	1.51	0.99	0.58	7.00	13.44	5.58	2.23	1.48	0.52
	49.25	93 R	4.98	8.71	3.61	1.48	0.97	0.57	7.00	13.55	5.27	2.15	1.44	0.52
Avg	4.99	8.68	3.62	1.50	0.98	0.57	7.00	13.50	5.43	2.19	1.46	0.52	417	

Table A-6 (Cont'd.)

OCEAN CITY FIELD DATA - TERMINAL APRON

NDT NO.	STATION ft	OFFSET ft	F1	D1(0)	D2(18)	D3(36)	D4(48)	S1	F2	D1(0)	D2(18)	D3(36)	D4(48)	S2	DSM k/in
			kip	mil	mil	mil	mil	k/mil	kip	mil	mil	mil	k/mil	mil	k/mil
11	48.75	93 R	5.04	7.77	4.67	2.62	1.87	0.65	7.02	11.56	6.59	3.82	2.74	0.61	522
11	48.75	93 R	5.00	7.74	4.65	2.71	1.92	0.65	6.94	11.24	6.96	3.95	2.00	0.62	554
12	48.25	93 R	5.04	9.67	4.91	2.19	1.31	0.52	6.94	14.83	7.32	3.45	2.04	0.47	368
		93 R	5.00	9.71	4.96	2.25	1.32	0.51	7.00	15.16	7.68	3.36	2.01	0.46	367
13	47.75	93 R	5.04	13.02	6.62	2.71	1.62	0.39	2.98	7.34	3.73	1.51	0.90	0.41	363
		93 R	5.02	12.73	6.33	2.59	1.52	0.39	3.00	7.39	3.79	1.56	0.90	0.41	378
13	47.75	Avg	5.02	9.69	4.94	2.22	1.32	0.52	6.97	15.00	7.50	3.41	2.03	0.46	368
		Avg	5.02	7.76	4.66	2.67	1.90	0.65	6.98	11.40	6.78	3.89	2.37	0.61	538
14	47.25	93 R	5.04	9.74	5.48	2.14	1.25	0.52	7.04	15.72	8.90	3.48	1.99	0.45	334
		93 R	4.98	9.99	5.62	2.16	1.35	0.50	6.98	15.59	8.62	3.38	2.03	0.45	357
14	47.25	Avg	5.03	12.88	6.48	2.65	1.57	0.39	2.99	7.37	3.76	1.54	0.90	0.41	370
		Avg	5.01	9.87	5.55	2.15	1.30	0.51	7.01	15.66	8.76	3.43	2.01	0.45	346
15	46.75	93 R	4.98	8.78	3.50	1.32	0.78	0.57	6.94	13.65	5.30	2.01	1.18	0.51	402
		93 R	5.00	8.77	3.48	1.28	0.77	0.57	6.98	13.97	5.32	1.96	1.17	0.50	381
15	46.75	Avg	4.99	8.78	3.49	1.30	0.78	0.57	6.96	13.81	5.31	1.98	1.18	0.50	392
		Avg	4.99	8.78	3.49	1.30	0.78	0.57	6.96	13.81	5.31	1.98	1.18	0.50	392
16	46.25	93 R	4.98	5.15	3.31	1.73	1.12	0.97	7.02	7.81	4.94	2.76	1.78	0.90	767
		93 R	4.96	5.25	3.50	1.87	1.21	0.94	7.04	7.92	5.13	2.69	1.79	0.89	779
16	46.25	Avg	4.97	5.20	3.41	1.80	1.17	0.96	7.03	7.87	5.04	2.73	1.79	0.89	773
		Avg	4.97	5.20	3.41	1.80	1.17	0.96	7.03	7.87	5.04	2.73	1.79	0.89	773
17	45.75	93 R	4.98	5.03	3.28	1.92	1.36	0.99	6.96	7.54	4.74	2.76	1.95	0.92	789
		93 R	4.98	5.07	3.16	1.83	1.28	0.98	6.98	7.62	4.98	2.94	1.89	0.92	784
17	45.75	Avg	4.98	5.05	3.22	1.88	1.32	0.99	6.97	7.58	4.86	2.85	1.92	0.92	787
		Avg	4.98	5.05	3.22	1.88	1.32	0.99	6.97	7.58	4.86	2.85	1.92	0.92	787
18	45.25	93 R	5.00	7.96	5.10	2.23	1.19	0.63	6.94	12.47	7.93	3.60	1.88	0.56	430
		93 R	4.98	8.14	5.16	2.35	1.25	0.61	7.06	12.70	8.08	3.59	1.90	0.56	456
18	45.25	Avg	4.99	8.05	5.13	2.29	1.22	0.62	7.00	12.59	8.01	3.60	1.89	0.56	443
		Avg	4.99	6.68	3.96	1.92	1.19	0.75	7.02	10.28	5.78	2.83	1.73	0.68	564
19	49.50	80 R	5.02	6.63	4.01	1.95	1.18	0.76	7.00	10.17	5.88	2.76	1.74	0.69	559
		80 R	4.96	6.73	3.90	1.89	1.19	0.74	7.04	10.39	5.67	2.89	1.72	0.68	568
19	49.50	Avg	4.99	11.72	7.09	3.58	2.34	0.43	7.02	19.29	11.54	5.76	3.81	0.36	270
		Avg	4.99	11.72	7.09	3.58	2.34	0.43	7.02	19.29	11.54	5.76	3.81	0.36	270

Table A-6 (Cont'd.)
OCEAN CITY FIELD DATA - TERMINAL APRON

NDT	STATION	OFFSET	F1	D1(0)	D2(18)	D3(36)	D4(48)	S1	F2	D1(0)	D2(18)	D3(36)	D4(48)	S2	DSM
		ft	kip	mil	mil	mil	mil	kip	mil	mil	mil	mil	mil	k/mil	k/in
21	48.50	80 R	4.96	8.16	5.21	2.83	1.73	0.61	6.94	12.55	7.97	4.20	2.57	0.55	451
21	48.50	80 R	4.98	8.39	5.34	2.81	1.72	0.59	6.98	12.84	8.32	4.47	2.73	0.54	449
	Avg	4.97	8.28	5.28	2.82	1.73	0.60	6.96	12.70	8.15	4.34	2.65	0.55	450	
22	48.00	80 R	5.04	8.98	4.36	2.02	1.26	0.56	6.94	13.49	6.43	2.94	1.93	0.51	421
22	48.00	80 R	5.02	8.99	4.45	2.04	1.29	0.56	6.96	13.75	6.60	3.12	1.86	0.51	408
	Avg	5.03	8.99	4.41	2.03	1.28	0.56	6.95	13.62	6.52	3.03	1.90	0.51	414	
23	47.50	80 R	4.98	7.96	5.09	2.50	1.70	0.63	7.02	12.20	7.35	3.61	2.48	0.58	481
23	47.50	80 R	5.02	8.24	5.30	2.57	1.73	0.61	7.04	12.21	7.43	3.66	2.51	0.58	509
	Avg	5.00	8.10	5.20	2.54	1.72	0.62	7.03	12.21	7.39	3.64	2.50	0.58	495	
24	47.00	80 R	4.96	6.24	3.96	1.74	1.07	0.79	6.96	9.56	5.77	2.55	1.60	0.73	602
24	47.00	80 R	5.04	6.49	4.15	1.83	1.09	0.78	6.94	9.50	6.04	2.58	1.57	0.73	631
	Avg	5.00	6.37	4.06	1.79	1.08	0.79	6.95	9.53	5.91	2.57	1.59	0.73	617	
25	46.50	80 R	5.00	6.33	3.44	2.10	1.46	0.79	7.04	9.99	5.00	3.11	2.11	0.70	557
25	46.50	80 R	4.96	6.58	3.51	2.22	1.56	0.75	6.96	9.87	5.20	3.08	2.18	0.71	608
	Avg	4.98	6.46	3.48	2.16	1.51	0.77	7.00	9.93	5.10	3.10	2.15	0.70	583	
26	46.00	80 R	5.02	4.37	3.07	1.82	1.26	1.15	7.06	6.39	4.28	2.57	1.80	1.10	1010
26	46.00	80 R	4.96	4.31	3.04	1.89	1.25	1.15	7.06	6.31	4.46	2.80	1.86	1.12	1050
	Avg	4.99	4.34	3.06	1.86	1.26	1.15	7.06	6.35	4.37	2.69	1.83	1.11	1030	
27	45.50	80 R	5.00	6.57	3.74	1.88	1.22	0.76	7.04	10.37	5.86	2.85	1.85	0.68	537
27	45.50	80 R	5.02	6.86	3.85	1.88	1.21	0.73	7.00	10.38	5.71	2.74	1.75	0.67	563
	Avg	5.01	6.72	3.80	1.88	1.22	0.75	7.02	10.38	5.79	2.80	1.80	0.68	550	
28	49.50	65 R	5.02	8.44	4.46	1.62	1.07	0.59	6.94	12.80	6.45	2.40	1.56	0.54	440
28	49.50	65 R	5.02	8.67	4.57	1.70	1.08	0.58	6.96	13.02	6.56	2.41	1.59	0.53	446
	Avg	5.02	8.56	4.52	1.66	1.08	0.59	6.95	12.91	6.51	2.41	1.58	0.54	443	
29	48.50	65 R	5.00	10.74	5.24	2.05	1.29	0.47	6.94	17.03	8.18	3.02	1.88	0.41	308
29	48.50	65 R	4.96	10.81	5.30	2.03	1.27	0.46	6.96	17.12	7.96	2.97	1.87	0.41	317
	Avg	4.98	10.78	5.27	2.04	1.28	0.46	6.95	17.08	8.07	3.00	1.88	0.41	313	
30	47.50	65 R	5.00	8.88	5.41	2.43	1.29	0.56	6.96	14.02	7.92	3.54	1.87	0.50	381
30	47.50	65 R	4.96	9.13	5.56	2.50	1.33	0.54	6.96	14.37	8.38	3.75	1.94	0.48	382
	Avg	4.98	9.01	5.49	2.47	1.31	0.55	6.96	14.20	8.15	3.65	1.91	0.49	382	

Table A-6 (Cont'd.)

OCEAN CITY FIELD DATA - TERMINAL APRON

NDT NO.	STATION ft	OFFSET ft	F1	D1(0) kip	D2(18) mil	D3(36) mil	D4(48) mil	S1 k/mil	F2 kip	D1(0) mil	D2(18) mil	D3(36) mil	D4(48) mil	S2 k/mil	DSM k/in
			Avg	4.97	6.49	4.13	2.29	1.48	0.77	6.96	9.73	6.22	3.49	2.20	0.72
31	46.50	65 R	4.98	6.42	4.10	2.26	1.47	0.78	6.98	9.75	6.23	3.51	2.14	0.72	601
	46.50	65 R	4.96	6.56	4.15	2.32	1.49	0.76	6.94	9.71	6.20	3.46	2.25	0.71	629
32	45.50	65 R	5.02	6.51	3.32	1.57	1.01	0.77	6.98	9.92	5.00	2.35	1.45	0.70	575
	45.50	65 R	4.98	6.67	3.46	1.60	1.01	0.75	7.00	10.13	5.03	2.32	1.47	0.69	584
33	44.50	65 R	4.98	6.88	3.28	1.26	0.87	0.72	6.96	10.90	5.03	1.88	1.30	0.64	493
	44.50	65 R	4.96	6.85	3.42	1.30	0.90	0.72	6.96	10.98	5.03	1.83	1.28	0.63	484
34	49.00	52 R	5.02	4.42	3.40	2.34	1.75	1.14	6.98	6.33	4.94	3.41	2.56	1.10	1026
	49.00	52 R	4.98	4.45	3.43	2.36	1.78	1.12	6.96	6.35	4.80	3.33	2.49	1.10	1042
35	48.00	52 R	5.04	11.95	5.43	2.20	1.39	0.42	6.94	19.45	8.92	3.40	2.26	0.36	253
	48.00	52 R	4.96	12.00	5.64	2.27	1.44	0.41	6.96	19.56	9.03	3.51	2.16	0.36	265
36	47.00	52 R	5.00	11.98	5.54	2.24	1.42	0.42	6.95	19.51	8.98	3.46	2.21	0.36	259
	47.00	52 R	4.98	10.49	5.73	2.17	1.24	0.47	6.96	16.41	8.64	3.27	1.86	0.42	289
37	46.00	52 R	5.04	7.95	3.62	1.69	1.09	0.63	7.06	12.56	5.12	2.48	1.65	0.56	438
	46.00	52 R	4.96	8.11	3.77	1.82	1.12	0.61	6.96	12.43	5.34	2.59	1.71	0.56	463
38	45.00	52 R	4.96	12.33	4.94	1.55	1.04	0.40	7.01	12.50	5.23	2.54	1.68	0.56	451
	45.00	52 R	4.96	12.24	4.92	1.56	1.01	0.41	7.00	12.48	5.20	2.53	1.67	0.56	454
39	49.50	39 R	4.96	5.30	3.91	2.60	1.90	0.94	6.96	7.84	5.87	3.96	2.89	0.89	787
	49.50	39 R	5.02	5.52	4.23	2.84	2.08	0.91	6.94	7.95	5.91	3.96	2.88	0.87	790
40	48.50	39 R	4.96	10.02	4.01	1.75	1.19	0.50	6.98	16.18	6.27	2.71	1.87	0.43	328
	48.50	39 R	4.98	9.34	3.78	1.60	1.06	0.53	7.02	16.19	5.91	2.55	1.77	0.43	298
		Avg	4.97	9.68	3.90	1.68	1.13	0.51	7.00	16.19	6.09	2.63	1.82	0.43	313

Table A-6 (Cont'd.)

OCEAN CITY FIELD DATA - TERMINAL ARRON

NDT NO.	STATION	OFFSET ft	F1 mil kip	D1(0)	D2(18)	D3(36)	D4(48)	S1 mil k/mil	F2 mil kip	D1(0)	D2(18)	D3(36)	D4(48)	S2 mil k/mil	DSM k/in
				mil	mil	mil	mil	k/mil	mil	mil	mil	mil	k/mil	mil	
41	47.50	39 R	4.98	9.85	4.77	1.97	1.26	0.51	6.98	15.80	7.50	3.12	1.94	0.44	336
	41	47.50	39 R	5.00	9.99	4.89	2.04	1.36	0.50	7.00	15.80	7.56	2.99	1.94	0.44
42	46.50	Avg	4.99	9.92	4.83	2.01	1.31	0.50	6.99	15.80	7.53	3.06	1.94	0.44	340
	42	46.50	39 R	4.96	4.96	7.48	3.82	1.62	1.04	6.66	6.96	11.10	5.59	2.34	1.50
43	45.50	Avg	4.96	7.53	3.87	1.67	1.07	0.66	6.97	11.15	5.68	2.34	1.50	0.63	558
	43	45.50	39 R	5.00	4.96	9.33	3.89	1.47	1.03	0.53	7.00	15.17	6.21	2.20	1.53
44	44.50	Avg	4.98	9.39	4.28	1.47	0.95	0.53	7.02	15.22	6.15	2.19	1.53	0.46	349
	44	45.50	39 R	5.02	4.98	7.47	3.77	1.34	0.92	0.67	6.94	11.88	5.92	2.07	1.35
45	49.00	Avg	5.00	7.60	3.81	1.35	0.91	0.66	6.94	11.88	5.86	2.07	1.35	0.58	444
	45	49.00	26 R	5.02	5.08	3.86	2.38	1.55	0.99	7.06	7.62	5.64	3.47	2.29	0.92
46	48.00	Avg	5.00	5.14	3.83	2.34	1.54	0.97	7.01	7.61	5.64	3.47	2.26	0.92	830
	46	48.00	26 R	5.00	4.96	11.36	5.15	1.55	1.02	0.44	7.02	18.47	8.15	2.30	1.49
47	47.00	Avg	4.98	11.66	5.34	1.62	1.03	0.43	6.98	18.32	8.11	2.29	1.48	0.38	301
	47	47.00	26 R	4.96	4.98	6.37	3.97	2.06	1.32	0.78	7.02	10.01	6.14	3.02	2.01
48	46.00	Avg	4.97	6.45	4.04	2.08	1.35	0.77	7.03	10.09	6.17	3.09	2.02	0.70	566
	48	46.00	26 R	4.96	5.04	5.47	3.40	1.70	1.09	0.92	7.02	8.20	5.04	2.46	1.66
49	45.00	Avg	5.00	5.45	3.39	1.72	1.10	0.92	7.00	8.21	5.06	2.55	1.62	0.85	725
	49	45.00	26 R	4.98	5.42	7.81	3.55	1.26	0.86	0.64	7.00	12.65	5.39	1.88	1.23
50	49.50	Avg	4.99	7.89	3.61	1.29	0.86	0.63	6.98	12.56	5.48	1.91	1.21	0.56	413
	50	49.50	13 R	4.98	5.02	11.23	6.03	2.07	1.36	0.45	7.00	17.65	9.06	3.03	1.95
51	50.00	Avg	5.00	11.26	6.12	2.07	1.34	0.44	6.98	17.51	9.13	3.00	1.94	0.40	325
	51	50.00	13 R	5.00	4.98	11.28	6.21	2.07	1.31	0.44	6.96	17.37	9.19	2.96	1.92

Table A-6 (Cont'd.)
OCEAN CITY FIELD DATA - TERMINAL APRON

NO.	STATION	OFFSET	F1 ft	D1(0)	D2(18)	D3(36)	D4(48)	S1 mil	F2 kip	D1(0)	D2(18)	D3(36)	D4(48)	S2 mil	S2 k/mil	DSW k/in
				kD	mil	kD	mil	kD	mil	kD	mil	kD	mil	kD	mil	
51	48.50	13 R	4.96	11.14	5.40	1.82	1.12	0.45	6.94	17.50	7.84	2.53	1.55	0.40	311	
	48.50	13 R	5.02	11.37	5.39	1.77	1.07	0.44	6.94	17.67	8.22	2.58	1.62	0.39	305	
52	47.50	13 R	5.02	9.19	4.42	1.78	1.19	0.55	6.98	14.27	6.83	2.73	1.81	0.49	386	
	47.50	13 R	4.98	9.22	4.64	1.83	1.21	0.54	7.00	14.43	6.68	2.69	1.82	0.49	388	
53	46.50	13 R	4.96	5.65	3.42	1.83	1.15	0.88	7.00	8.65	5.07	2.72	1.75	0.81	680	
	46.50	13 R	5.02	5.82	3.53	1.80	1.18	0.86	7.00	8.66	5.21	2.62	1.73	0.81	696	
54	45.50	13 R	5.00	6.37	3.89	1.90	1.18	0.78	6.94	9.56	5.62	2.82	1.78	0.73	608	
	45.50	13 R	4.98	6.47	3.99	2.01	1.25	0.77	6.96	9.74	5.88	2.97	1.81	0.71	606	
55	49.50	13 R	4.96	6.92	4.05	1.65	1.07	0.72	7.06	10.94	6.20	2.39	1.54	0.65	523	
	49.50	13 R	4.98	7.10	4.12	1.65	1.04	0.70	7.02	10.93	6.22	2.37	1.49	0.64	533	
56	49.00	BL	5.02	7.71	4.22	2.00	1.28	0.65	6.96	11.69	6.33	2.94	1.92	0.60	487	
	49.00	BL	4.98	7.62	4.18	1.97	1.29	0.65	6.98	11.78	6.12	2.89	1.88	0.59	486	
57	48.00	BL	5.00	9.26	4.94	1.75	1.02	0.54	7.00	14.71	7.83	2.64	1.56	0.48	367	
	48.00	BL	4.98	9.49	5.12	1.78	1.07	0.52	7.02	14.92	7.86	2.68	1.54	0.47	376	
59	46.00	BL	5.02	6.97	3.21	1.62	1.09	0.72	7.02	10.64	4.75	2.34	1.58	0.66	545	
	46.00	BL	4.98	7.05	3.15	1.62	1.08	0.71	6.98	10.86	4.89	2.27	1.53	0.64	525	
60	45.00	BL	5.01	7.68	4.74	2.43	1.54	0.65	6.99	11.85	6.94	3.61	2.29	0.59	476	
	45.00	BL	4.94	7.66	4.70	2.41	1.53	0.63	6.96	11.90	6.94	3.49	2.06	0.37	269	
61	49.50	13 L	4.98	11.65	5.80	2.28	1.35	0.43	6.96	19.00	9.44	3.49	2.06	0.37	269	

Table A-6 (Cont'd.)

OCEAN CITY FIELD DATA - TERMINAL APRON

NDT NO.	STATION NO.	OFFSET ft	F1	D1(0) mil kip	D2(18) mil kip	D3(36) mil kip	D4(48) mil kip	S1 k/mil	F2	D1(0) mil kip	D2(18) mil kip	D3(36) mil kip	D4(48) mil kip	S2 k/mil k/in	
62	48.50	13 L	5.06	10.54	5.24	2.10	1.36	0.48	7.04	15.71	7.91	3.07	2.02	0.45	387
62	48.50	13 L	5.00	10.45	5.37	2.12	1.34	0.48	6.98	15.92	8.11	3.16	1.93	0.44	362
	Avg														
63	47.50	13 L	5.06	6.36	4.00	2.06	1.34	0.79	6.98	9.54	6.03	3.05	2.00	0.73	610
63	47.50	13 L	4.98	6.41	4.13	2.04	1.34	0.78	7.06	9.72	6.17	3.11	2.00	0.73	628
	Avg														
64	49.50	103 L	5.00	8.95	4.67	2.13	1.36	0.56	6.98	13.89	7.55	3.35	2.09	0.50	401
64	49.50	103 L	4.96	9.09	4.98	2.27	1.43	0.55	7.06	14.30	7.53	3.40	2.10	0.49	403
	Avg														
65	48.50	103 L	4.98	8.00	5.21	2.39	1.64	0.62	6.96	12.23	8.08	3.55	2.44	0.57	468
65	48.50	103 L	5.00	8.26	5.35	2.46	1.66	0.61	6.98	12.38	8.19	3.72	2.36	0.56	481
	Avg														

64 49.50 103 L 4.98 8.13 5.28 2.43 1.65 0.61 6.97 12.31 8.14 3.64 2.40 0.57 474

Table A-6 (Cont'd.)

OCEAN CITY FIELD DATA - CONNECTOR TW

NDT	STATION NO.	OFFSET ft	F1 kip	D1(0) mil	D2(18) mil	D3(36) mil	D4(48) mil	S1 k/mil	F2 kip	D1(0) mil	D2(18) mil	D3(36) mil	D4(48) mil	S2 k/mil	DSM k/in
D1(18) mil	D3(72) mil	D4(96) mil	D5(120) mil	D6(144) mil	D7(168) mil	D8(180) mil	D9(192) mil								
200	1.00	5 R	5.00	8.24	5.58	2.30	1.42	0.61	6.98	13.04	8.96	3.67	2.16	0.54	413
200	1.00		5.04	8.51	5.73	2.34	1.43	0.59	6.94	13.06	8.91	3.87	2.30	0.53	418
		Avg	5.02	8.38	5.66	2.32	1.43	0.60	6.96	13.05	8.94	3.77	2.23	0.53	415
201	2.00	5 R	5.02	9.28	5.23	1.76	0.99	0.54	6.96	15.00	7.75	2.60	1.58	0.46	339
201	2.00		5.02	9.64	5.20	1.74	1.03	0.52	6.98	15.21	8.56	2.87	1.72	0.46	352
		Avg	5.02	9.46	5.22	1.75	1.01	0.53	6.97	15.11	8.16	2.74	1.65	0.46	346
202	3.00	5 R	5.02	6.52	3.85	1.78	1.02	0.77	6.96	9.95	5.81	2.74	1.56	0.70	566
202	3.00		5.02	6.68	3.96	1.80	1.03	0.75	6.98	10.23	6.09	2.77	1.59	0.68	552
		Avg	5.02	6.60	3.91	1.79	1.03	0.76	6.97	10.09	5.95	2.76	1.58	0.69	559
203	4.00	5 R	5.00	8.72	5.20	1.70	0.82	0.57	7.04	14.38	8.22	2.72	1.28	0.49	360
203	4.00		4.98	9.01	5.51	1.82	0.84	0.55	7.00	14.18	8.73	2.89	1.28	0.49	391
		Avg	4.99	8.87	5.36	1.76	0.83	0.56	7.02	14.28	8.48	2.81	1.28	0.49	376
204	4.50	5 L	4.96	7.73	4.10	1.51	1.05	0.64	7.06	12.23	6.17	2.27	1.52	0.58	467
204	4.50		4.96	7.74	3.97	1.45	1.00	0.64	6.98	11.97	6.27	2.22	1.52	0.58	478
		Avg	4.96	7.74	4.04	1.48	1.03	0.64	7.02	12.10	6.22	2.25	1.52	0.58	472
205	3.50	5 L	4.96	9.65	3.76	0.96	0.54	0.51	7.04	15.25	6.10	1.49	0.80	0.46	371
205	3.50		5.04	9.47	3.91	0.97	0.52	0.53	7.00	14.99	6.13	1.44	0.73	0.47	355
		Avg	5.00	9.56	3.84	0.97	0.53	0.52	7.02	15.12	6.12	1.47	0.77	0.46	363
206	2.50	5 L	4.98	9.22	3.46	1.07	0.77	0.54	7.00	15.32	5.58	1.72	1.23	0.46	331
206	2.50		4.96	9.40	3.56	1.11	0.79	0.53	7.02	15.33	5.63	1.63	1.18	0.46	347
		Avg	4.97	9.31	3.51	1.09	0.78	0.53	7.01	15.33	5.61	1.68	1.21	0.46	339
207	1.50	5 L	5.00	10.49	5.40	1.66	1.06	0.48	7.04	17.24	8.69	2.78	1.83	0.41	302
207	1.50		5.00	10.79	5.43	1.69	1.07	0.46	6.94	17.02	8.66	2.76	1.74	0.41	311
		Avg	5.00	10.64	5.42	1.68	1.07	0.47	6.99	17.13	8.68	2.77	1.79	0.41	307
208	1.50	15 R	5.00	9.77	5.63	1.94	1.18	0.51	7.04	16.08	9.06	3.14	1.91	0.44	323
208	1.50		4.96	9.77	5.70	1.93	1.20	0.51	7.00	16.15	9.00	3.05	1.94	0.43	320
		Avg	4.98	9.77	5.67	1.94	1.19	0.51	7.02	16.12	9.03	3.10	1.93	0.44	322
209	2.50	15 R	5.00	5.73	3.73	1.53	0.88	0.87	6.94	8.82	5.63	2.39	1.35	0.79	-628
209	2.50		5.02	5.99	3.85	1.64	0.93	0.84	6.96	8.89	5.36	2.27	1.30	0.78	-669
		Avg	5.01	5.86	3.79	1.59	0.91	0.86	6.95	8.86	5.50	2.33	1.33	0.78	-648

Table A-6 (Cont'd.)

OCEAN CITY FIELD DATA - CONNECTOR TW

NDT NO.	STATION	OFFSET ft	F1 kip	D1(0) mil	D2(18) mil	D3(36) mil	D4(48) mil	S1 k/mil	F2 kip	D1(0) mil	D2(18) mil	D3(36) mil	D4(48) mil	S2 k/mil	DSM k/in
210	3.50	15 R	5.00	9.30	4.62	1.00	0.59	0.54	7.06	15.20	6.83	1.44	0.84	0.46	349
210	3.50		5.02	9.64	4.83	1.02	0.59	0.52	6.98	15.35	7.49	1.48	0.80	0.45	343
	Avg		5.01	9.47	4.73	1.01	0.59	0.53	7.02	15.28	7.16	1.46	0.82	0.46	346
211	4.50	15 R	4.98	5.82	3.52	1.67	1.09	0.86	6.98	8.90	5.34	2.54	1.67	0.78	649
211	4.50		4.96	5.99	3.62	1.72	1.09	0.83	6.98	8.95	5.39	2.65	1.69	0.78	682
	Avg		4.97	5.91	3.57	1.70	1.09	0.84	6.98	8.93	5.37	2.60	1.68	0.78	666
212	4.00	15 L	4.96	6.88	4.46	2.25	1.26	0.72	7.00	10.82	7.07	3.55	2.02	0.65	518
212	4.00		5.02	7.14	4.50	2.24	1.29	0.70	6.98	10.66	6.99	3.48	2.06	0.65	557
	Avg		4.99	7.01	4.48	2.25	1.28	0.71	6.99	10.74	7.03	3.52	2.04	0.65	537
213	3.00	15 L	5.04	8.01	4.35	1.84	1.11	0.63	6.94	11.94	6.66	2.59	1.57	0.58	483
213	3.00		4.98	8.01	4.47	1.79	1.09	0.62	7.04	12.28	6.24	2.57	1.60	0.57	482
	Avg		5.01	8.01	4.41	1.82	1.10	0.63	6.99	12.11	6.45	2.58	1.59	0.58	483
214	2.00	15 L	4.96	9.65	5.32	1.64	0.90	0.51	7.02	15.74	8.66	2.53	1.41	0.45	338
214	2.00		5.02	10.02	5.58	1.68	0.94	0.50	7.06	16.07	9.02	2.64	1.46	0.44	337
	Avg		4.99	9.84	5.45	1.66	0.92	0.51	7.04	15.91	8.84	2.59	1.44	0.44	338
215	1.00	15 L	5.04	9.33	4.87	1.70	1.04	0.54	6.94	14.56	7.82	2.51	1.57	0.48	363
215	1.00		4.96	9.27	5.04	1.68	1.03	0.54	7.04	14.79	7.67	2.67	1.66	0.48	377
	Avg		5.00	9.30	4.96	1.69	1.04	0.54	6.99	14.68	7.75	2.59	1.62	0.48	370

Table A-6 (Cont'd.)

OCEAN CITY FIELD DATA - NEW PARALLEL TW

NDT NO.	STATION ft	OFFSET ft	F1	D1(0)	D2(18)	D3(36)	D4(48)	S1	F2	D1(0)	D2(18)	D3(36)	D4(48)	S2	DSW k/in
			kip	mil	mil	mil	mil	k/mil	mil	kip	mil	mil	mil	k/mil	mil
100	49.00	5 L	4.96	7.74	3.94	1.65	1.18	0.64	6.98	11.94	6.14	2.50	1.82	0.58	481
100	49.00	5.00	5.00	7.86	4.18	1.67	1.20	0.64	6.94	11.85	6.32	2.60	1.83	0.59	486
		Avg	4.98	7.80	4.06	1.66	1.19	0.64	6.96	11.90	6.23	2.55	1.83	0.59	484
101	48.50	5 L	4.96	7.49	3.68	1.49	1.11	0.66	7.04	11.86	5.85	2.36	1.77	0.59	476
101	48.50	5.00	7.79	3.92	1.60	1.17	0.64	7.00	11.82	5.77	2.44	1.84	0.59	496	
		Avg	4.98	7.64	3.80	1.55	1.14	0.65	7.02	11.84	5.81	2.40	1.81	0.59	486
102	48.00	5 L	4.96	8.16	4.24	1.84	1.37	0.61	6.96	12.59	6.40	2.70	2.02	0.55	451
102	48.00	5.00	8.38	4.45	1.83	1.34	0.60	6.94	12.46	6.52	2.75	2.00	0.56	475	
		Avg	4.98	8.27	4.35	1.84	1.36	0.60	6.95	12.53	6.46	2.73	2.01	0.55	463
103	47.50	5 L	5.04	8.89	4.47	1.74	1.24	0.57	7.04	13.73	6.98	2.68	1.93	0.51	413
103	47.50	5.02	8.92	4.56	1.80	1.27	0.56	7.06	13.82	7.13	2.81	2.02	0.51	416	
		Avg	5.03	8.91	4.52	1.77	1.26	0.56	7.05	13.78	7.06	2.75	1.98	0.51	415
104	47.00	5 L	4.96	7.34	3.95	1.64	1.21	0.68	7.00	11.36	6.09	2.42	1.76	0.62	507
104	47.00	5.02	7.59	3.88	1.67	1.19	0.66	6.96	11.22	5.98	2.46	1.86	0.62	534	
		Avg	4.99	7.47	3.92	1.66	1.20	0.67	6.98	11.29	6.04	2.44	1.81	0.62	521
105	46.50	5 L	4.98	7.81	4.25	1.79	1.28	0.64	6.94	11.81	6.53	2.65	1.91	0.59	490
105	46.50	4.96	7.95	4.30	1.77	1.30	0.62	6.98	11.98	6.31	2.63	1.90	0.58	501	
		Avg	4.97	7.88	4.28	1.78	1.29	0.63	6.96	11.90	6.42	2.64	1.91	0.59	496
106	46.00	5 L	5.04	8.30	4.46	1.73	1.28	0.61	7.06	12.79	6.52	2.57	1.87	0.55	450
106	46.00	5.04	8.34	4.56	1.79	1.27	0.60	7.04	12.86	6.97	2.74	1.97	0.55	442	
		Avg	5.04	8.32	4.51	1.76	1.28	0.61	7.05	12.83	6.75	2.66	1.92	0.55	446
107	45.50	5 L	5.00	7.82	4.58	1.84	1.28	0.64	6.98	12.00	6.67	2.72	1.92	0.58	474
107	45.50	4.98	7.90	4.65	1.86	1.31	0.63	7.04	12.14	7.11	2.83	2.03	0.58	486	
		Avg	4.99	7.86	4.62	1.85	1.30	0.63	7.01	12.07	6.89	2.78	1.97	0.58	480
108	49.25	5 R	5.04	6.71	4.15	1.93	1.32	0.75	6.94	9.74	6.28	2.78	1.89	0.71	627
108	49.25	5.04	6.66	4.20	1.91	1.28	0.76	7.02	9.90	6.17	2.85	1.98	0.71	611	
		Avg	5.04	6.69	4.18	1.92	1.30	0.75	6.98	9.82	6.23	2.82	1.94	0.71	619
109	48.75	5 R	5.02	6.26	3.76	1.68	1.24	0.80	6.96	9.23	5.65	2.49	1.75	0.75	653
109	48.75	5.04	6.32	3.83	1.71	1.20	0.80	7.02	9.31	5.45	2.55	1.80	0.75	662	
		Avg	5.03	6.29	3.80	1.70	1.22	0.80	6.99	9.27	5.55	2.52	1.78	0.75	658

Table A-6 (Cont'd.)

OCEAN CITY FIELD DATA - NEW PARALLEL TW

NDT NO.	STATION	OFFSET ft	F1	D1(0) mil	D2(18) mil	D3(36) mil	D4(48) mil	S1 k/mil	-2 kip	D1(0) mil	D2(18) mil	D3(36) mil	D4(48) mil	S2 k/mil	DSM k/in*	
			kip	mil	mil	mil	mil	k/mil	mil	mil	mil	mil	mil	k/mil	k/in*	
110	48.25	5 R	4.96	7.02	3.92	1.55	1.09	0.71	7.02	10.74	5.99	2.20	1.53	0.65	554	
110	48.25		5.00	7.07	4.01	1.53	1.09	0.71	7.04	10.68	5.99	2.37	1.64	0.66	565	
111	47.78	5 R	4.96	7.10	4.04	1.66	1.19	0.70	6.94	10.68	5.87	2.45	1.80	0.65	553	
111	47.78		5.00	7.15	4.03	1.68	1.21	0.70	6.94	10.66	6.09	2.53	1.81	0.65	553	
112	47.25	5 R	4.96	7.35	3.89	1.61	1.19	0.67	7.04	11.30	5.67	2.42	1.79	0.62	527	
112	47.25		4.96	7.36	4.03	1.75	1.27	0.67	6.96	10.97	5.99	2.54	1.80	0.63	554	
113	46.75	5 R	4.96	7.40	4.04	1.56	1.12	0.67	7.00	11.11	5.67	2.19	1.60	0.63	550	
113	46.75		4.96	7.34	4.04	1.52	1.08	0.68	6.98	11.08	5.95	2.35	1.71	0.63	540	
114	46.25	5 R	4.96	7.36	3.96	1.68	1.23	0.67	7.00	11.14	5.83	2.48	1.80	0.63	540	
114	46.25		4.96	7.37	4.04	1.54	1.10	0.67	6.99	11.10	5.81	2.27	1.66	0.63	545	
115	45.75	5 R	5.04	7.79	4.29	1.80	1.24	0.65	6.96	12.08	6.53	2.75	1.96	0.58	448	
115	45.75		4.98	7.95	4.39	1.76	1.24	0.63	6.98	12.00	6.60	2.71	1.91	0.58	494	
116	45.25	5 R	4.96	7.19	4.14	1.64	1.17	0.69	7.04	10.84	6.16	2.44	1.70	0.65	570	
116	45.25		4.96	7.25	4.23	1.70	1.21	0.68	6.94	10.93	6.35	2.51	1.73	0.63	538	
117	49.00	15 R	5.04	10.64	7.26	3.39	1.84	0.47	6.94	16.55	10.95	5.33	2.98	0.42	321	
117	49.00		5.04	10.63	7.25	3.44	1.86	0.47	6.96	16.41	11.24	5.45	2.96	0.42	332	
118	48.00	15 R	4.98	7.60	4.31	1.89	1.33	0.66	6.98	11.57	6.60	2.86	2.03	0.60	499	
118	48.00		4.96	7.94	4.39	1.89	1.33	0.65	7.00	11.85	6.86	3.02	2.08	0.59	484	
119	47.00	15 R	4.96	7.87	4.40	1.90	1.36	0.63	7.04	12.04	6.48	2.85	2.08	0.58	494	
119	47.00		4.96	4.13	1.71	1.86	1.35	0.62	7.06	12.05	6.61	2.76	2.00	0.59	511	
119	47.00	Avg	4.97	7.91	4.41	1.88	1.36	0.63	7.05	12.05	6.55	2.81	2.06	0.60	502	
119	47.00		Avg	4.96	7.91	4.06	1.69	1.24	0.63	6.99	12.21	6.05	2.53	1.89	0.57	472

RD-R194 555

INVESTIGATION OF THE INTER-RELATIONSHIP BETWEEN BASE
PAVEMENT STIFFNESS A. (U) MCQUEEN (ROY D) AND
ASSOCIATES LTD OAKTON VA R D MCQUEEN MAR 88

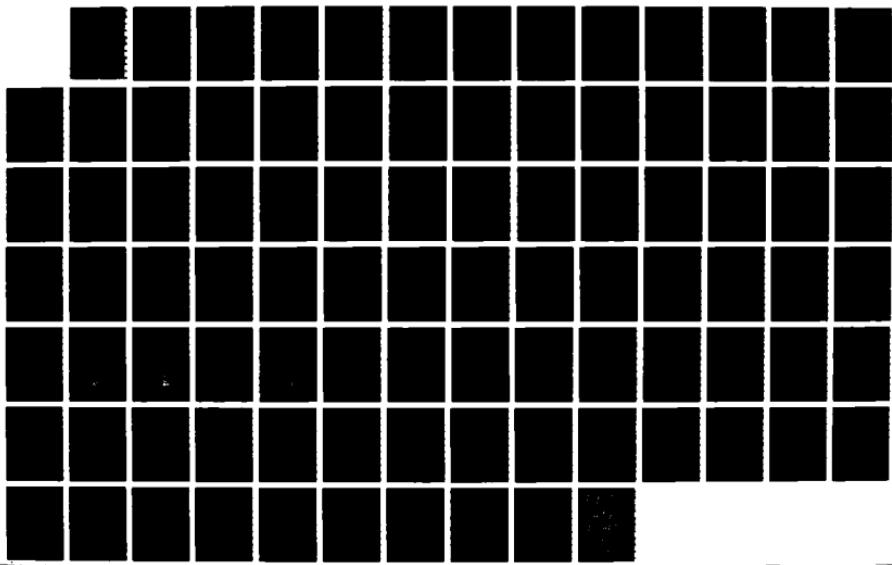
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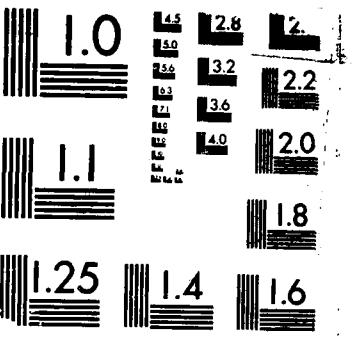
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MICROCOPY RESOLUTION TEST CHART
NBS 1963-A

Table A-6 (Cont'd.)

OCEAN CITY FIELD DATA - NEW PARALLEL TW

NDT NO.	STATION NO.	OFFSET ft	F1	D1(0) mil	D2(18) mil	D3(36) mil	D4(48) mil	S1 k/mil	F2	D1(0) mil	D2(18) mil	D3(36) mil	D4(48) mil	S2 k/mil	DSM k/in
			kip	kip	kip	kip	kip	kip	kip	kip	kip	kip	kip	kip	kip
120	46.00	15 R	5.00	8.85	4.54	1.64	1.14	0.56	6.96	13.78	7.04	2.46	1.64	0.51	398
120	46.00		5.00	8.96	4.61	1.66	1.11	0.56	7.00	13.63	6.99	2.54	1.68	0.51	428
	Avg		5.00	8.91	4.58	1.65	1.13	0.56	6.98	13.71	7.02	2.50	1.66	0.51	413
121	44.00	15 R	5.00	11.80	7.64	2.25	1.08	0.42	6.94	19.57	12.71	3.70	1.85	0.35	250
122	43.00	15 R	4.98	10.47	6.24	1.66	0.74	0.48	7.06	17.13	10.36	2.69	1.12	0.41	312
122	43.00		4.96	10.08	5.98	1.62	0.73	0.49	6.98	16.65	10.07	2.76	1.19	0.42	307
	Avg		4.97	10.28	6.11	1.64	0.74	0.48	7.02	16.89	10.22	2.73	1.16	0.42	310
123	42.00	15 R	5.00	11.76	7.00	2.28	1.08	0.43	6.98	19.11	12.21	3.78	1.86	0.37	269
123	42.00		5.00	11.59	7.03	2.25	1.17	0.43	7.00	18.87	11.76	3.79	1.94	0.37	275
	Avg		5.00	11.68	7.02	2.27	1.13	0.43	6.99	18.99	11.99	3.79	1.90	0.37	272
124	41.00	15 R	4.96	10.89	5.62	1.52	0.81	0.46	6.98	17.72	9.11	2.40	1.29	0.39	296
124	41.00		5.00	10.77	5.64	1.61	0.88	0.46	6.96	17.47	9.19	2.48	1.29	0.40	293
	Avg		4.98	10.83	5.63	1.57	0.85	0.46	6.97	17.60	9.15	2.44	1.29	0.40	294
125	41.50	15 L	4.96	17.32	11.60	4.14	1.89	0.29	2.98	8.27	5.44	1.76	0.83	0.36	219
125	41.50		4.96	15.79	10.64	3.66	1.74	0.31	2.98	7.86	5.10	1.74	0.84	0.38	250
	Avg		4.96	16.56	11.12	3.90	1.82	0.30	2.98	8.07	5.27	1.75	0.84	0.37	234
126	42.50	15 L	4.98	11.91	6.83	1.95	1.07	0.42	7.06	19.39	11.53	3.40	1.79	0.36	278
126	42.50		5.04	11.94	6.84	2.00	1.08	0.42	6.94	19.30	11.51	3.30	1.80	0.36	258
	Avg		5.01	11.93	6.84	1.98	1.08	0.42	7.00	19.35	11.52	3.35	1.80	0.36	268
127	43.50	15 L	4.98	10.04	5.21	1.61	0.99	0.50	6.94	15.84	8.15	2.51	1.54	0.44	338
127	43.50		4.96	9.80	4.93	1.58	1.00	0.51	6.94	15.41	8.27	2.47	1.53	0.45	353
	Avg		4.97	9.92	5.07	1.60	1.00	0.50	6.94	15.63	8.21	2.49	1.54	0.44	345
128	44.50	15 L	5.02	10.45	5.32	1.41	0.77	0.48	7.04	17.50	8.47	2.25	1.24	0.40	287
128	44.50		5.02	10.59	5.44	1.47	0.79	0.47	6.98	17.03	9.02	2.41	1.26	0.41	304
	Avg		5.02	10.52	5.38	1.44	0.78	0.48	7.01	17.27	8.75	2.33	1.25	0.41	295
129	45.50	15 L	4.98	8.42	4.49	1.38	1.08	0.59	6.96	13.18	6.64	2.33	1.58	0.53	416
129	45.50		5.02	8.59	4.64	1.69	1.11	0.58	6.94	13.20	7.00	2.43	1.69	0.53	416
	Avg		5.00	8.51	4.57	1.64	1.10	0.59	6.95	13.19	6.82	2.38	1.64	0.53	416
130	46.50	15 L	4.98	9.31	5.06	1.80	1.24	0.53	7.00	14.89	7.78	2.84	1.94	0.47	362
130	46.50		4.96	9.40	5.24	1.94	1.31	0.53	6.94	14.50	7.92	2.85	1.96	0.48	388
	Avg		4.97	9.36	5.15	1.87	1.28	0.53	6.97	14.70	7.85	2.85	1.95	0.47	375

Table A-6 (Cont'd.)

OCEAN CITY FIELD DATA - NEW PARALLEL TW

NDT NO.	STATION NO.	OFFSET ft	F1 kip mi	D1(0) mi	D2(18) mi	D3(36) mi	D4(48) mi	S1 kip mi	F2 kip mi	D1(0) mi	D2(18) mi	D3(36) mi	D4(48) mi	S2 kip mi	DSM k/in
131	47.50	15 L	5.02	8.23	4.29	1.60	1.16	0.61	7.06	12.97	6.75	2.56	1.89	0.54	426
131	47.50		4.98	8.29	4.26	1.68	1.21	0.60	6.94	12.77	6.64	2.61	1.92	0.54	437
	Avg	5.00	8.26	4.28	1.64	1.19	0.61	6.99	12.87	6.70	2.59	1.91	0.54		
132	48.50	15 L	5.04	7.55	3.52	1.49	1.12	0.67	6.94	11.47	5.58	2.34	1.75	0.61	485
132	48.50		5.02	7.66	3.81	1.59	1.17	0.66	6.98	11.59	5.40	2.28	1.70	0.60	499
	Avg	5.03	7.61	3.67	1.54	1.15	0.66	6.96	11.53	5.49	2.31	1.73	0.60		
133	44.00	5 L	4.98	9.58	5.35	1.60	0.89	0.52	7.00	15.41	9.04	2.72	1.48	0.45	346
133	44.00		4.98	9.49	5.52	1.75	0.92	0.52	7.02	15.31	8.59	2.68	1.44	0.46	351
	Avg	4.98	9.54	5.44	1.68	0.91	0.52	7.01	15.36	8.82	2.70	1.46	0.46		
134	43.00	5 L	5.00	10.35	5.81	2.00	1.10	0.48	6.96	16.45	9.47	3.29	1.88	0.42	321
134	43.00		4.96	10.17	5.80	2.03	1.10	0.49	6.96	16.31	9.31	3.39	1.82	0.43	326
	Avg	4.98	10.26	5.81	2.02	1.10	0.49	6.96	16.38	9.39	3.34	1.85	0.42		
135	42.00	5 L	5.00	12.62	7.55	2.56	1.31	0.40	3.00	6.75	4.09	1.39	0.74	0.44	341
135	42.00		5.04	12.33	7.51	2.55	1.32	0.41	3.02	6.76	4.04	1.41	0.75	0.45	362
	Avg	5.02	12.48	7.53	2.56	1.32	0.40	3.01	6.76	4.07	1.40	0.75	0.45		
136	41.00	5 L	5.02	12.58	7.78	2.89	1.46	0.40	3.00	6.45	3.84	1.39	0.74	0.47	330
136	41.00		5.02	12.19	7.45	2.68	1.39	0.41	2.98	6.32	3.71	1.34	0.71	0.47	348
	Avg	5.02	12.39	7.62	2.79	1.43	0.41	2.99	6.39	3.78	1.37	0.73	0.47		
137	41.50	5 R	4.98	10.23	6.23	1.88	0.96	0.49	6.96	16.40	9.28	2.97	1.53	0.42	321
137	41.50		5.00	10.20	6.10	1.93	0.98	0.49	7.06	16.44	10.00	3.21	1.54	0.43	330
	Avg	4.99	10.22	6.17	1.91	0.97	0.49	7.01	16.42	9.64	3.09	1.54	0.43		
138	42.50	5 R	5.00	10.72	6.15	1.74	0.86	0.47	7.00	17.21	9.79	2.88	1.49	0.41	308
138	42.50		5.00	10.50	6.18	1.79	0.89	0.48	6.94	16.68	9.62	2.82	1.41	0.42	314
	Avg	5.03	10.61	6.17	1.77	0.88	0.47	6.97	16.95	9.71	2.85	1.45	0.41		
139	43.50	5 R	5.04	9.11	5.18	1.65	1.01	0.55	6.98	14.32	8.06	2.53	1.54	0.49	372
139	43.50		5.02	8.90	5.22	1.64	0.98	0.56	7.00	13.85	8.00	2.56	1.51	0.51	400
	Avg	5.03	9.01	5.20	1.65	1.00	0.56	6.99	14.09	8.03	2.55	1.53	0.50		
140	44.50	5 R	4.98	9.87	5.09	1.49	0.84	0.50	6.98	16.09	8.58	2.53	1.34	0.43	322
140	44.50		5.00	10.03	5.59	1.64	0.90	0.50	6.94	15.73	8.45	2.52	1.40	0.44	340
	Avg	4.99	9.95	5.34	1.57	0.87	0.50	6.96	15.91	8.52	2.53	1.37	0.44		

APPENDIX B

NUCLEAR DENSITY DATA

TETERBORO RUNWAY 1-19

TABLE B-1

NOT NO.	STA ft	OFFSET ft	TETERBORO RUNWAY 1-19 OVERLAY				CORE FINAL SURFACE COURSE NUCLEAR UNIT WTS NO.	1	2	3	4	AVG
			1	2	3	4						
1	31.00	56 R	157.6	156.4	158.6	154.7	156.8	154.7	153.9	155.5	155.9	156.6
2	33.00	56 R	152.5	154.8	154.7	153.9	154.0	150.3	151.3	154.5	153.9	153.8
3	35.00	56 R	150.7	152.4	148.4	149.5	149.5	150.3	151.3	152.3	155.6	153.3
4	37.15	56 R	152.1	151.1	150.3	151.7	151.3	150.4	151.3	158.2	158.7	157.8
5	39.00	56 R	150.4	150.7	150.6	150.0	150.4	151.3	150.3	157.5	157.3	157.4
6	41.00	56 R	150.5	156.1	152.1	151.3	152.0	151.3	150.7	160.5	156.1	155.9
7	43.00	56 R	152.5	149.2	149.5	151.6	150.7	151.6	150.7	156.4	153.3	155.8
8	45.00	56 R	147.1	169.4	147.6	149.9	148.5	149.9	149.9	152.9	155.0	154.6
9	47.00	56 R	153.7	153.6	153.8	156.9	154.5	154.5	154.5	155.5	155.0	153.5
10	49.00	56 R	153.5	151.6	151.4	149.4	151.4	151.5	151.5	156.6	157.4	156.0
11	51.00	56 R	154.1	152.6	152.6	153.8	152.8	152.8	152.8	159.6	157.8	153.9
12	53.00	56 R	152.4	153.0	153.4	155.0	153.5	153.5	153.7	156.2	155.6	155.2
13	55.00	56 R	151.2	152.6	151.1	153.3	152.1	152.1	152.1	152.0	152.9	155.5
14	57.00	56 R	154.5	152.3	153.5	152.7	153.3	153.3	153.3	152.9	155.8	154.2
15	59.00	56 R	169.0	148.8	147.1	147.0	148.0	147.0	147.0	152.8	153.6	153.3
16	61.00	56 R	152.4	153.3	150.2	149.7	151.4	151.4	151.4	154.8	152.8	154.2
17	63.00	56 R	143.8	143.9	145.4	147.2	145.1	145.1	145.1	154.2	152.8	152.9
18	65.00	56 R	148.7	148.0	149.6	148.3	148.7	148.7	148.7	155.7	155.3	155.7
19	32.00	32 R	151.5	152.5	151.9	151.9	151.0	151.0	151.0	155.3	153.7	155.9
20	34.00	32 R	147.4	149.3	148.3	148.9	148.9	148.9	148.9	152.6	152.6	154.5
21	36.00	32 R	151.0	151.0	148.6	150.1	150.2	150.2	150.2	154.1	154.1	154.0
22	38.00	32 R	152.2	152.7	149.0	151.8	151.4	151.4	151.4	154.2	154.2	154.7
23	40.00	32 R	154.6	156.5	156.4	153.7	154.8	154.8	154.8	158.7	155.8	155.2
24	42.00	32 R	154.8	152.2	153.3	154.2	153.6	153.6	153.6	157.6	156.6	156.4
25	44.00	32 R	157.4	156.8	157.2	155.8	156.3	156.3	156.3	152.6	152.6	152.2
26	46.00	32 R	148.8	150.3	150.6	152.7	151.1	151.1	151.1	154.5	154.5	145.1
27	48.00	32 R	155.1	153.1	155.7	153.3	154.3	154.3	154.3	152.2	150.8	152.8
28	50.00	32 R	154.2	154.6	152.8	152.8	153.6	153.6	153.6	155.6	155.6	151.6
29	52.00	32 R	155.0	156.5	154.4	157.1	155.3	155.3	155.3	156.3	156.3	156.4
30	54.00	32 R	156.2	154.0	154.8	155.2	155.2	155.2	155.2	158.2	158.2	156.6
31	56.00	32 R	155.7	152.5	156.4	153.7	155.3	154.5	154.5	157.6	156.3	153.5
32	58.00	32 R	151.6	155.0	153.3	151.4	152.8	152.8	152.8	157.1	153.9	154.6
33	60.00	32 R	151.7	149.5	149.6	150.3	150.3	150.3	150.3	160.1	157.9	160.3
34	62.00	32 R	150.9	152.2	152.5	150.5	151.6	151.6	151.6	150.4	154.7	152.4
35	64.00	32 R	149.6	151.7	150.2	153.2	151.2	151.2	151.2	160.1	159.3	159.5
36	66.00	32 R	156.6	154.5	153.0	155.6	154.4	154.4	154.4	156.1	153.6	154.1
37	68.00	32 R	158.8	157.0	158.3	158.1	158.1	158.1	158.1	160.6	159.1	161.3
38	70.00	32 R	155.8	156.5	154.2	155.8	155.6	155.6	155.6	158.6	157.3	156.9
39	72.00	32 R	154.2	154.2	153.7	154.8	153.9	153.9	153.9	156.5	156.3	154.5
40	74.00	32 R	155.4	156.0	155.1	156.0	155.1	155.1	155.1	157.5	160.5	153.0
41	76.00	32 R	155.5	154.3	152.6	155.1	154.4	154.4	154.4	156.1	158.4	161.3
42	78.00	6.5 R	156.1	153.3	155.0	155.2	154.4	154.4	154.4	159.8	159.8	160.4
43	80.00	6.5 R	155.1	156.0	158.6	158.6	158.6	158.6	158.6	158.9	156.4	159.7
44	82.00	6.5 R	159.6	156.0	158.6	158.6	158.6	158.6	158.6	158.3	154.1	157.7
45	84.00	6.5 R	154.4	154.4	154.4	154.4	154.4	154.4	154.4	155.6	155.6	155.3

THIN LFT
NUCLEAR
UNIT WT

Table B-1 (Cont'd.)

TETERBORO RUNWAY 1-19

TEREBORO RUNWAY 1-19 OVERLAY

NDT NO.	STA ft	OFFSET ft	TRUING AND LEVELING NUCLEAR UNIT WTS				Ave	No.	CORE FINAL SURFACE COURSE NUCLEAR UNIT WTS				Ave
			1	2	3	4			1	2	3	4	
46	49.00	6.5 R	158.1	160.4	156.5	157.6	158.2	157.3	156.2	159.7	157.9	153.1	
67	51.00	6.5 R	152.2	154.4	154.9	156.1	154.4	158.5	155.8	159.1	159.8	153.3	
48	53.00	6.5 R	155.4	156.0	153.9	156.5	154.4	156.3	156.3	153.8	153.5	151.9	
69	55.00	6.5 R	156.3	154.5	152.9	152.9	153.6	158.5	157.7	159.7	158.1	154.9	
50	57.00	6.5 R	157.6	155.1	156.0	157.9	156.7	156.7	156.7	158.2	159.7	154.6	
51	59.00	6.5 R	149.0	151.8	150.5	151.1	150.6	155.5	153.5	154.7	156.8	155.1	
52	61.00	6.5 R	157.3	154.9	155.0	156.5	155.9	151.6	151.5	153.2	152.0	151.3	
53	63.00	6.5 R	156.3	152.2	153.1	155.3	153.7	159.0	156.3	156.9	157.4	155.1	
54	65.00	6.5 R	155.3	155.4	154.5	153.6	154.2	157.0	159.0	156.3	156.9	153.2	
55	32.00	18 L	153.7	154.7	153.5	151.8	153.4	158.2	158.3	156.9	160.0	158.4	
56	34.00	18 L	159.9	152.7	152.8	153.5	152.7	152.1	152.1	152.2	153.4	152.7	
57	36.00	18 L	149.9	148.7	151.8	151.0	150.5	157.7	155.7	158.5	156.8	153.4	
58	38.00	18 L	155.8	158.9	158.7	155.8	157.3	155.9	154.9	156.5	155.6	150.2	
59	40.00	18 L	155.3	157.2	154.3	153.6	155.1	155.9	155.6	155.9	154.8	155.6	
60	42.00	18 L	150.9	152.0	153.9	151.9	152.2	158.2	155.5	157.6	157.0	157.1	
61	44.00	18 L	156.4	156.4	156.7	154.6	155.5	156.3	156.0	158.7	154.7	150.3	
62	62	48.00	18 L	153.5	153.5	154.9	154.5	154.1	154.6	153.8	154.5	152.6	
63	64	50.00	18 L	156.5	153.1	157.2	157.7	155.6	154.9	157.5	156.3	152.1	
65	65	52.00	18 L	150.9	152.0	152.0	153.9	151.9	154.2	155.9	155.9	154.2	
66	54.00	18 L	141.0	142.5	140.0	143.3	141.7	156.1	156.2	156.7	155.9	156.3	
67	56.00	18 L	153.5	155.5	154.2	153.8	156.3	154.6	154.6	153.6	154.1	152.6	
68	58.00	18 L	155.0	155.9	154.5	156.9	155.6	154.9	156.3	156.3	158.4	156.8	
69	60.00	18 L	155.4	155.6	156.1	156.1	155.7	154.2	155.6	156.1	156.1	153.7	
70	70	62.00	18 L	156.8	153.9	151.8	155.2	156.4	156.4	156.4	158.6	157.9	
71	64.00	18 L	145.7	149.1	149.8	148.7	149.3	152.5	154.5	152.1	152.4	152.3	
72	72	66.00	18 L	153.6	153.4	151.7	149.7	152.1	159.5	159.4	157.1	155.6	
73	73	51.00	43 L	158.8	153.4	154.4	153.4	154.0	152.7	154.1	154.2	153.5	
74	74	33.00	43 L	149.6	150.9	150.2	151.2	150.5	150.5	152.3	150.8	151.0	
75	75	35.00	43 L	150.7	149.6	149.6	147.9	149.5	156.6	158.5	156.7	152.2	
76	76	37.15	43 L	148.8	153.7	151.6	149.9	151.0	153.5	152.2	151.1	149.2	
77	77	39.00	43 L	148.4	146.5	148.8	146.8	147.6	159.9	156.2	153.4	153.5	
78	78	41.00	43 L	145.9	146.5	148.5	149.1	147.8	153.0	152.4	150.3	149.8	
79	79	43.00	43 L	148.2	148.0	151.5	151.9	149.9	156.4	153.4	153.7	152.7	
80	80	45.00	43 L	156.4	152.1	154.6	153.5	153.7	154.7	156.7	156.3	149.9	
81	81	47.00	43 L	149.1	152.9	155.4	155.4	156.7	155.7	155.1	155.3	151.6	
82	82	49.00	43 L	153.0	152.7	153.2	151.5	152.6	157.6	156.5	156.7	152.3	
83	83	51.00	43 L	148.7	150.5	149.8	148.5	149.4	158.0	156.7	157.3	151.3	
84	84	53.00	43 L	147.8	147.6	149.7	150.8	149.9	152.0	155.0	153.1	153.4	
85	85	55.00	43 L	148.7	148.8	147.4	149.4	148.6	158.7	157.6	156.5	155.4	
86	86	57.00	43 L	147.7	151.0	149.3	150.9	149.7	155.7	155.1	154.7	152.7	
87	87	59.00	43 L	146.1	146.9	145.5	146.6	146.3	155.1	154.3	153.0	151.6	
88	88	61.00	43 L	151.0	147.2	150.5	149.6	149.6	153.7	152.5	152.7	153.4	
89	89	63.00	43 L	146.1	145.2	145.0	142.3	144.2	155.2	156.5	155.2	153.4	
									152.3	152.3	156.0	154.5	

NDT NO.	STA ft	OFFSET ft	TRUING AND LEVELING NUCLEAR UNIT WTS				Ave	No.	CORE FINAL SURFACE COURSE NUCLEAR UNIT WTS				Ave
			1	2	3	4			1	2	3	4	
46	49.00	6.5 R	158.1	160.4	156.5	157.6	158.2	157.3	156.2	159.7	157.9	153.1	
67	51.00	6.5 R	152.2	154.4	154.9	156.1	154.4	158.5	155.8	159.1	159.8	153.3	
48	53.00	6.5 R	155.4	156.0	153.9	156.5	156.7	156.3	156.3	153.8	153.5	151.9	
69	55.00	6.5 R	156.3	154.5	152.9	152.9	153.6	158.5	157.7	159.7	158.1	154.9	
50	57.00	6.5 R	157.6	155.1	156.0	157.9	156.7	156.7	156.7	158.2	159.7	154.6	
51	59.00	6.5 R	149.0	151.8	150.5	151.1	150.6	155.5	153.5	154.7	156.8	155.1	
52	61.00	6.5 R	157.3	154.9	155.0	156.5	155.9	151.6	151.5	153.2	152.0	151.3	
53	63.00	6.5 R	156.3	152.2	153.1	155.3	153.7	159.0	156.3	156.9	157.4	155.1	
54	65.00	6.5 R	155.3	155.4	154.5	153.6	154.2	157.6	155.5	155.8	156.6	153.2	
55	32.00	18 L	153.7	154.7	153.5	151.8	153.4	158.2	158.3	156.9	160.0	158.4	
56	34.00	18 L	159.9	152.7	152.8	153.5	152.7	152.1	152.1	152.2	153.4	152.7	
57	36.00	18 L	149.9	148.7	151.8	151.0	150.5	157.7	155.7	158.5	156.8	153.4	
58	38.00	18 L	155.8	158.9	158.7	155.8	157.3	155.9	154.9	156.5	155.6	150.2	
59	40.00	18 L	155.3	157.2	154.3	153.6	155.1	155.9	155.6	155.9	154.8	155.6	
60	42.00	18 L	150.9	152.0	153.9	151.9	152.2	158.2	155.5	157.6	157.0	157.1	
61	44.00	18 L	156.4	156.4	156.7	154.6	155.5	156.3	156.0	158.7	154.7	150.3	
62	62	48.00	18 L	153.5	153.5	154.9	154.5	154.1	154.6	153.8	154.5	152.6	
63	63	50.00	18 L	156.5	153.1	157.2	157.7	155.6	154.9	157.5	158.4	152.1	
65	65	52.00	18 L	150.9	155.4	155.4	155.5	155.5	158.2	156.4	157.9	153.3	
66	54.00	18 L	141.0	142.5	140.0	143.3	141.7	156.1	156.2	156.7	155.9	156.3	
67	56.00	18 L	153.5	155.5	154.2	153.8	156.3	154.6	154.3	157.7	156.4	153.5	
68	58.00	18 L	155.0	155.9	154.5	156.9	155.6	154.9	155.5	156.8	156.2	152.0	
69	60.00	18 L	155.4	155.6	156.1	156.1	155.7	155.6	155.6	156.2	156.2	152.2	
70	70	62.00	18 L	156.8	153.9	151.8	155.2	156.4	156.6	158.5	156.7	155.4	
71	64.00	18 L	145.7	149.1	149.8	148.7	149.3	152.5	154.5	152.1	152.4	152.3	
72	72	66.00	18 L	153.6	153.4	151.7	149.7	152.1	159.5	159.4	157.1	155.6	
73	73	51.00	43 L	158.8	153.4	154.4	153.4	154.0	152.7	154.1	154.2	153.5	
74	74	33.00	43 L	149.6	150.9	150.2	151.2	150.5	152.3	150.8	150.4	151.0	
75	75	35.00	43 L	150.7	149.6	149.6	147.9	149.5	154.7	152.2	151.1	149.2	
76	76	37.15	43 L	148.8	153.7	151.6	149.9	151.0	153.5	152.2	151.1	152.8	
77	77	39.00	43 L	148.4	146.5	148.8	146.8	147.6	159.9	156.2	153.4	155.2	
78	78	41.00	43 L	145.9	146.5	148.5	148.5	149.1	152.4	150.3	151.3	149.8	
79	79	43.00	43 L	148.2	148.0	151.5	151.5	149.9	156.4	153.4			

LEESBURG MUNICIPAL AIRPORT, VA

TABLE B-2

NOT. NO.	NUCLEAR UNIT WTS PRIOR TO OVERLAY			FINAL SURFACE COURSE NUCLEAR UNIT WTS			3411 AVG UNCOR			THN LFT UNIT WT *****	
	1	2	3	4	Avg	REMARKS	Core No.	1	2	3	
1	152.6	153.6	152.3	155.3	154.9		166.7	162.0	159.4	164.5	163.2
2	152.1	153.1	152.3	149.8	152.5		164.1	164.0	163.5	163.2	163.7
3	151.7	151.7	154.2	151.0	153.6		160.0	161.4	161.1	159.8	160.6
4	150.2	150.2	150.9	152.5	148.8		161.8	158.3	159.8	158.5	159.6
5	149.7	149.7	148.0	150.0	148.4		162.5	160.4	164.5	160.7	162.0
6	151.9	151.1	150.0	148.7	150.4		157.2	155.6	155.4	158.5	156.7
7	150.5	150.5	149.4	152.4	151.8		165.5	163.0	161.9	160.7	162.8
8	152.6	152.6	153.5	157.9	153.3		161.9	162.6	159.7	161.6	161.5
9	152.7	152.7	153.7	154.7	153.9		161.2	161.8	160.7	157.5	160.3
10	158.5	158.3	156.7	155.4	156.5		164.9	163.9	166.5	165.0	
11	159.2	159.2	157.3	159.3	158.7		162.2	161.6	164.1	163.1	162.8
12	156.5	156.1	156.3	155.3	155.1		157.5	158.4	157.1	161.4	158.6
13	159.4	158.8	163.7	159.9	160.5		161.3	159.7	160.0	158.4	160.1
14	162.9	160.1	157.1	160.9	159.1		157.1	159.8	159.5	158.9	158.8
15	153.4	152.2	152.2	153.8	153.8		156.1	153.3	156.4	155.9	155.9
16	155.3	156.4	157.1	156.8	156.4		153.9	155.5	153.5	156.5	154.9
17	148.6	148.7	148.5	153.3	149.8		160.9	164.3	159.4	157.0	158.2
18	156.2	157.2	154.5	156.0	155.8		160.9	164.3	159.7	159.5	161.1
19	153.2	154.7	155.0	153.8	154.2		160.3	160.4	164.8	164.3	162.5
20	154.3	153.4	155.7	158.1	157.8		155.5	153.5	157.9	156.8	155.4
21	155.3	156.4	157.1	156.8	156.4		160.7	157.8	158.1	159.2	159.0
22	157.5	157.8	157.7	157.7	157.0		160.8	160.8	160.6	160.4	159.9
23	156.8	156.8	157.8	156.9	156.8		163.1	156.5	161.8	162.9	160.6
24	156.5	156.7	157.7	155.5	159.5		161.0	161.4	159.5	160.1	160.5
25	151.6	150.5	150.5	152.9	151.4		164.2	164.2	163.1	161.9	163.4
26	158.7	158.7	158.5	155.7	155.7		162.2	159.8	160.2	160.3	
27	155.9	155.6	156.4	158.2	156.5		158.1	158.3	156.3	156.3	158.1
28	157.8	157.8	157.4	158.7	157.8		159.7	158.6	160.6	160.4	159.8
29	157.6	158.1	156.4	157.5	157.5		159.6	159.6	160.1	159.3	159.5
30	155.3	156.2	158.2	155.3	156.3		163.1	162.7	162.7	160.4	162.3
31	155.1	157.8	159.2	159.2	157.8		164.2	164.1	166.5	163.7	164.6
32	158.7	158.3	160.2	158.2	158.9		160.4	160.2	161.1	159.0	160.2
33	156.9	154.6	157.1	154.6	155.8		162.2	158.0	164.1	162.0	161.6
34	156.1	158.2	158.1	156.5	157.2		160.5	160.4	161.2	158.9	160.3
35	155.1	153.8	156.2	155.6	155.2		158.5	158.7	161.2	156.2	158.7
36	161.2	163.0	158.1	160.2	160.6		C-6	not tested		161.0	160.4
37	161.8	161.9	161.1	160.4	161.3					162.1	
38	157.2	159.8	161.1	156.5	158.7		161.1	160.0	160.1	159.8	160.3
39	157.3	159.3	158.1	157.3	157.3		158.0	158.9	159.0	160.3	159.1
40	153.9	156.1	157.7	154.3	155.5		157.0	161.7	159.8	160.9	159.9
41	158.1	157.7	160.6	154.9	157.8		160.3	159.6	162.7	159.9	160.6
42	156.6	157.1	153.4	154.0	155.3		160.4	163.1	160.6	162.3	161.6
43	163.3	163.4	158.6	161.0	161.0		160.9	159.2	160.8	157.3	159.6
44	157.0	156.0	157.1	156.5	156.5		161.5	160.3	162.9	159.2	161.0
45	156.4	156.3	158.8	159.7	157.7		161.0	159.9	159.8	160.8	

IRREGULAR TRANSVERSE CRACK

C-7

154.8

148.1

Table B-2 (Corr'd.)

LEESBURG MUNICIPAL AIRPORT, VA

NOT NO.	NUCLEAR UNIT WTS PRIOR TO OVERLAY			FINAL SURFACE COURSE NUCLEAR UNIT WTS			CORE NO.	1	2	3	4	AVG UNCORR	3411 THW LFT UNIT WT
	1	2	3	6	Avg REMARKS								
46	28.00	5 L	156.8	157.6	157.1	159.7	157.8	161.0	158.1	159.4	158.8	159.3	159.3
47	29.00	5 L	152.4	152.1	152.5	152.8	152.5	157.2	160.2	160.9	159.3	159.4	159.4
48	30.00	5 L	151.4	150.4	150.6	152.7	151.3	156.2	159.0	158.8	159.7	158.4	158.4
49	31.00	5 L	156.3	151.2	154.5	153.3	153.3	156.2	157.5	159.4	159.4	158.1	158.1
50	32.00	5 L	156.2	152.5	155.6	151.6	153.5	156.3	161.1	156.8	160.3	158.0	158.0
51	33.00	5 L	152.4	155.9	153.6	152.1	153.5	160.7	159.5	161.0	158.9	160.0	160.0
52	34.00	5 L	159.1	160.0	158.7	159.6	159.4	163.4	160.3	161.5	161.9	161.8	161.8
53	0.50	15 R	150.1	165.1	149.0	155.1	149.8	157.7	157.7	156.6	159.9	157.9	157.9
54	1.50	5 R	157.6	155.8	157.4	157.1	157.0	160.4	160.4	163.0	164.7	162.1	162.1
55	2.50	5 R	155.3	157.0	155.0	153.7	155.3	167.1	164.7	167.9	165.2	166.2	166.2
56	3.50	5 R	159.0	158.8	155.0	157.9	157.7	162.3	163.0	161.3	165.1	162.9	162.9
57	4.50	5 R	155.0	155.2	154.9	156.5	154.4	161.0	160.4	158.2	162.0	160.4	160.4
58	5.50	5 R	157.5	156.0	161.4	160.2	158.8	165.3	167.0	166.4	167.1	166.5	166.5
59	6.50	5 R	159.6	159.3	157.8	156.7	158.4	164.2	165.8	166.8	167.7	166.1	166.1
60	7.50	5 R	153.9	153.3	154.1	155.3	154.2	162.1	161.2	161.9	160.9	161.5	161.5
61	8.50	5 R	148.6	153.0	147.4	149.1	149.5	159.6	160.8	159.0	158.6	159.5	159.5
62	9.50	5 R	153.7	155.4	152.2	154.8	154.8	163.3	161.6	160.8	162.9	162.2	162.2
63	10.50	5 R	155.1	157.5	157.5	157.7	156.9	160.1	163.6	164.4	165.8	163.5	163.5
64	11.50	5 R	157.4	157.0	155.7	153.5	155.9	160.5	159.7	160.6	161.8	160.7	160.7
65	12.50	5 R	157.3	155.7	157.3	155.8	156.5	160.6	159.5	160.9	163.3	161.1	161.1
66	13.50	5 R	155.0	153.1	153.6	150.0	152.9	162.8	160.9	163.1	162.1	162.2	162.2
67	14.50	5 R	156.2	158.8	157.1	155.3	156.9	164.1	163.9	164.7	165.0	164.6	164.6
68	15.50	5 R	159.2	159.2	157.4	155.9	157.9	161.9	164.5	161.3	164.5	163.1	163.1
69	16.50	5 R	156.5	161.3	160.1	158.8	159.2	160.3	162.1	159.7	163.4	161.4	161.4
70	17.50	5 R	162.6	159.1	159.4	160.8	160.8	161.6	163.8	163.2	162.5	162.8	162.8
71	18.50	5 R	159.7	160.9	158.9	160.6	159.9	165.2	165.2	166.0	166.6	165.0	165.0
72	19.50	5 R	164.4	162.6	162.0	161.3	162.6	161.9	161.9	162.1	158.3	159.2	159.2
73	20.50	5 R	158.0	164.0	164.3	159.8	161.5	161.6	160.7	162.1	163.3	161.9	161.9
74	21.50	5 R	163.7	162.1	162.1	164.2	163.0	165.8	165.8	163.4	161.0	163.9	163.9
75	22.50	5 R	163.8	164.9	165.5	166.2	165.1	165.6	163.9	163.9	161.5	164.0	163.8
76	23.50	5 R	158.0	159.8	157.3	159.9	158.8	159.8	161.2	161.1	161.0	161.0	161.0
77	24.50	5 R	157.4	156.5	154.9	158.0	156.7	164.1	164.4	163.3	165.0	164.2	164.2
78	25.50	5 R	161.6	154.7	159.9	160.2	160.4	163.1	164.1	165.7	163.8	164.2	164.2
79	26.50	5 R	157.8	157.7	158.3	160.9	158.7	160.1	155.5	158.6	155.9	157.5	157.5
80	27.50	5 R	159.4	156.2	157.3	158.5	157.9	157.1	158.4	158.8	158.0	158.8	158.8
81	28.50	5 R	155.2	156.4	157.0	157.7	156.6	158.8	156.6	158.8	156.7	157.8	157.8
82	29.50	5 R	156.7	153.9	154.5	151.6	154.2	154.2	162.8	160.2	159.9	161.9	161.9
83	30.50	5 R	159.9	158.3	160.0	159.8	159.5	160.2	159.9	160.4	160.3	160.2	160.2
84	31.50	5 R	156.0	155.1	154.3	153.4	154.7	166.6	157.0	165.0	165.0	161.2	161.2
85	32.50	5 R	153.9	153.6	155.2	156.2	154.7	146.7	150.2	146.2	148.1	147.8	147.8
86	33.50	5 R	158.0	159.8	157.3	159.9	158.8	159.8	161.2	161.1	161.8	161.0	161.0
87	34.25	5 R	157.6	156.9	154.0	157.0	156.7	164.1	164.4	163.3	165.0	159.5	159.5
88	1.50	15 R	153.4	155.5	157.3	153.6	155.0	163.1	164.1	165.7	162.1	161.9	160.4
89	3.50	15 R	155.0	152.5	154.0	152.9	153.7	158.7	160.3	160.3	158.7	160.7	158.7
90	5.50	15 R	151.3	151.7	152.7	153.3	152.3	162.5	163.9	162.9	165.9	163.8	163.8
91	7.50	15 R	152.3	152.3	147.7	148.1	149.8	163.3	162.9	161.9	161.9	161.5	161.5

152.9

C-5
LONGITUDINAL STRESS CRACKIN
LONGITUDINAL STRESS CRACKINC-11
SEVERE CHECK CRACKS

Table B-2 (Cont'd.)

LEESBURG MUNICIPAL AIRPORT, VA

NOT NO.	NUCLEAR UNIT WTS PRIOR TO OVERLAY				CORE NO.	FINAL SURFACE COURSE NUCLEAR UNIT WTS				3411 AVG UNCORR
	1	2	3	4		Avg	REMARKS	1	2	
92	9.50	15 R	155.1	156.8	151.7	154.8		158.2	161.2	157.2
93	11.50	15 R	151.5	150.0	147.7	152.3		161.1	160.9	157.8
94	13.50	15 R	158.9	153.6	154.5	155.5		159.2	156.9	158.6
95	15.50	15 R	153.7	156.4	156.0	156.7		158.9	155.6	157.8
96	17.50	15 R	159.2	159.6	155.5	157.5	IRREGULAR TRANSVERSE CRACK	165.8	166.8	165.6
97	19.50	15 R	153.9	155.5	156.1	156.4		162.0	158.3	161.0
98	21.50	15 R	151.9	152.0	156.4	154.3		156.8	156.8	156.7
99	23.50	15 R	155.3	151.6	157.5	151.9		161.6	160.3	160.1
100	25.50	15 R	149.6	152.6	153.0	152.1		156.8	157.7	160.6
101	27.50	15 R	147.9	149.7	149.5	145.9		160.0	156.3	157.9
102	29.50	15 R	169.3	150.7	169.2	149.3		160.4	156.4	156.8
103	31.50	15 R	156.7	153.8	158.8	154.5		159.4	160.1	157.2
104	33.50	15 R	155.5	154.7	153.3	154.1		163.7	161.7	163.1
	2.33	15 L					C-1	162.2	164.0	161.2
	29.62	5 R					C-10	161.1	161.7	160.5
	7.62	15 R					C-12	162.7	161.5	162.4
	6.07	5 L					C-2	159.1	158.8	160.9
	8.59	5 R					C-3	157.1	159.3	162.2
	26.69	5 L					C-8	160.2	160.4	161.9
	28.62	15 L					C-9	154.7	155.6	156.2

TABLE B-3

TERMINAL APRON AND CONNECTOR TAXIWAY	OCEAN CITY MUNICIPAL AIRPORT	TERMINAL APRON AND CONNECTOR TAXIWAY OVERLAY	TRUEING/LEVELING COURSE				FINAL SURFACE COURSE NUCLEAR UNIT WTS				3411				THIN LIFT UNIT WT			
			NOT NO.	STA ft	OFFSET	NUCLEAR UNIT WTS	1	2	3	4	Avg	1	2	3	4	Avg	Uncorr	*****
1	49.50	105 R	142.4	140.7	140.8	140.3	141.1	140.3	145.3	146.0	145.3	148.9	146.1	146.1	146.1	143.5	143.5	
2	49.00	105 R	136.7	135.9	137.1	137.1	136.7	136.7	143.8	146.8	145.8	146.9	145.8	145.8	145.8	143.8	143.8	
3	48.50	105 R	139.4	138.8	140.6	141.5	140.1	140.1	142.9	144.9	143.5	145.5	144.2	144.2	144.2	143.5	143.5	
4	48.00	105 R	134.5	138.8	140.6	141.5	138.9	138.9	143.1	145.0	143.6	143.1	143.7	143.7	143.7	141.4	141.4	
5	47.50	105 R	134.5	138.5	137.7	136.6	136.6	136.6	144.9	144.9	144.5	144.5	144.3	144.3	144.3	145.0	145.0	
6	47.00	105 R	137.1	134.9	134.5	137.3	136.0	136.0	143.8	144.6	142.9	144.1	143.9	143.9	143.9	137.4	137.4	
7	46.50	105 R	131.6	131.6	133.5	131.8	132.1	132.1	143.3	141.6	142.8	142.0	142.4	142.4	142.4	143.4	143.4	
8	46.00	105 R	129.3	129.8	131.2	132.9	130.8	130.8	142.6	143.3	145.6	143.8	143.8	143.8	143.8	145.4	145.4	
9	45.50	105 R	136.2	138.3	134.0	132.8	135.3	135.3	143.4	141.9	143.4	140.8	142.4	142.4	142.4	140.6	140.6	
10	49.25	93 R	135.7	133.2	131.1	132.0	133.0	133.0	142.8	143.7	144.7	146.7	146.1	146.1	146.1	144.3	144.3	
11	48.75	93 R	132.2	134.4	132.7	132.3	132.9	132.9	146.3	144.1	148.6	144.0	145.8	145.8	145.8	146.5	146.5	
12	48.25	93 R	131.7	132.7	133.8	137.0	133.8	138.3	140.2	138.9	140.2	138.9	139.2	139.2	139.2	142.1	142.1	
13	47.75	93 R	133.7	133.1	132.9	134.0	133.4	144.3	146.5	145.2	142.0	143.4	144.9	144.9	144.9	144.9	144.9	
14	47.25	93 R	126.4	126.6	126.6	128.7	126.6	126.6	139.1	143.2	142.0	142.0	143.0	143.0	143.0	141.4	141.4	
15	46.75	93 R	132.4	130.7	130.8	130.8	130.3	131.1	146.5	146.0	144.5	146.0	145.9	145.9	145.9	143.9	143.9	
16	46.25	93 R	129.8	134.0	131.5	131.5	133.0	132.1	143.0	145.0	143.2	142.9	142.9	142.9	142.9	143.5	143.5	
17	45.75	93 R	131.5	133.5	130.9	134.2	132.5	132.5	140.3	140.5	139.5	141.7	141.7	141.7	141.7	140.6	140.6	
18	45.25	93 R	130.3	133.9	130.0	132.5	131.7	142.4	142.4	142.4	142.1	142.1	141.8	141.8	141.8	142.8	142.8	
19	49.50	80 R	134.9	139.9	132.1	136.4	135.6	135.6	143.5	148.8	147.5	147.5	145.4	145.4	145.4	144.3	144.3	
20	49.00	80 R	136.8	135.3	134.0	135.9	135.5	135.5	145.6	146.7	144.3	142.3	142.3	142.3	144.7	144.7	143.9	
21	48.50	80 R	130.8	131.7	134.7	134.1	132.8	132.8	141.5	140.2	138.5	138.1	139.6	139.6	139.6	140.9	140.9	
22	48.00	80 R	134.8	133.8	133.7	134.4	134.2	134.2	139.8	141.7	143.7	143.2	142.9	142.9	142.9	141.1	141.1	
23	47.50	80 R	140.2	137.2	137.9	137.5	138.2	138.2	142.7	142.7	142.3	142.9	142.3	142.3	142.3	145.5	145.5	
24	47.00	80 R	136.4	135.1	135.6	135.6	136.9	136.0	142.0	143.7	143.7	143.8	143.5	143.5	143.5	144.4	144.4	
25	46.50	80 R	137.9	139.4	139.6	137.3	138.6	138.6	142.8	144.1	145.0	145.0	144.2	144.2	144.2	147.0	147.0	
26	46.00	80 R	132.8	131.2	131.5	132.4	132.4	132.4	138.5	137.9	138.7	138.7	138.4	138.4	138.4	140.8	140.8	
27	45.50	80 R	133.2	134.5	133.7	133.7	133.7	133.7	140.5	142.5	142.1	142.5	142.5	142.5	142.5	142.8	142.8	
28	49.50	65 R	140.4	141.2	141.3	142.3	141.3	141.3	145.9	144.2	144.2	144.0	144.3	144.3	144.3	143.5	143.5	
29	48.50	65 R	139.6	142.5	142.9	144.2	142.3	142.3	141.7	142.2	143.6	144.2	144.2	144.2	144.2	143.5	143.5	
30	47.50	65 R	144.9	145.5	141.3	140.4	143.0	143.0	143.5	143.5	143.9	144.7	144.7	144.7	144.7	145.7	145.7	
31	46.50	65 R	140.1	143.3	141.2	162.1	162.1	162.1	145.8	148.8	147.1	146.4	147.0	147.0	147.0	143.8	143.8	
32	45.50	65 R	137.8	140.9	139.0	139.6	139.3	139.3	143.8	144.2	142.0	144.0	143.5	143.5	143.5	145.7	145.7	
33	44.50	65 R	144.3	143.3	146.6	144.1	144.1	144.1	143.3	144.1	141.5	141.5	143.8	143.8	143.8	143.1	143.1	
34	49.00	52 R	143.3	141.4	143.4	142.7	142.7	142.7	145.9	142.9	146.0	146.0	145.5	145.5	145.5	142.9	142.9	
35	48.00	52 R	144.2	146.6	146.6	143.3	143.3	145.5	144.8	145.9	143.6	143.6	144.6	144.6	144.6	145.1	145.1	
36	47.00	52 R	132.7	130.9	133.5	134.2	132.8	132.8	145.3	144.1	144.5	144.5	144.6	144.6	144.6	145.1	145.1	
37	46.00	52 R	138.7	138.5	136.0	138.3	138.3	138.3	142.8	144.8	143.1	144.3	144.3	144.3	144.3	144.5	144.5	
38	45.00	52 R	139.9	139.8	138.2	138.2	139.0	139.0	142.6	141.7	143.3	143.3	143.1	143.1	143.1	140.1	140.1	
39	49.50	39 R	139.9	139.5	141.7	141.0	140.5	140.5	145.6	145.6	146.9	146.9	144.3	144.3	144.3	143.5	143.5	
40	48.50	39 R	134.8	133.1	133.4	134.1	135.2	134.1	138.8	141.2	140.2	140.2	141.1	141.1	141.1	141.0	141.0	

Table B-3 (Cont'd.)

OCEAN CITY MUNICIPAL AIRPORT
 TERMINAL APRON AND CONNECTOR TAXIWAY OVERLAY

NDT NO.	STA ft	OFFSET ft	TRUEING/LEVELING COURSE				FINAL SURFACE COURSE NUCLEAR UNIT WTS				3411 AVG				UNCORR			
			1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
41	47.50	39 R	143.5	143.1	141.4	144.4	143.1	141.8	146.8	145.7	146.1	145.7	146.1	145.7	146.1	145.7	146.1	144.4
42	46.50	39 R	133.5	134.9	137.1	136.9	135.6	140.6	142.1	141.4	141.1	142.1	141.1	142.1	143.5	141.5	142.1	141.5
43	45.50	39 R	144.5	141.3	145.3	144.7	144.0	142.4	144.7	143.6	143.4	143.5	143.6	143.4	143.5	143.5	143.4	143.5
44	44.50	39 R	148.8	148.2	147.8	148.9	148.4	144.7	144.5	145.2	147.6	143.3	145.2	145.9	145.9	145.2	145.9	145.9
45	49.00	26 R	144.4	144.3	145.0	144.9	144.7	144.9	146.8	147.8	147.5	150.5	148.2	147.5	148.2	146.9	146.9	146.9
46	48.00	26 R	148.8	147.4	142.9	143.7	145.7	142.9	141.3	143.4	142.8	142.8	142.4	142.0	142.4	140.9	140.9	140.9
47	47.00	26 R	147.2	148.6	145.0	146.4	146.8	144.8	144.8	145.2	141.6	143.1	143.7	143.1	143.7	143.2	143.2	143.2
48	46.00	26 R	139.9	139.0	160.8	139.5	139.8	139.5	142.4	144.3	144.6	145.6	144.2	144.6	144.2	144.3	144.2	144.3
49	45.00	26 R	142.4	141.5	140.3	143.0	141.8	141.8	145.7	146.6	145.6	145.6	144.6	145.6	144.6	145.6	145.6	145.6
50	49.50	13 R	142.9	144.6	142.5	142.5	143.1	142.5	146.0	145.3	145.0	144.3	145.2	145.0	144.3	145.2	145.2	140.9
51	48.50	13 R	140.3	140.4	137.9	137.8	139.1	140.2	145.6	146.7	147.0	145.0	146.1	146.7	146.1	146.7	146.7	144.7
52	47.50	13 R	143.1	141.5	141.0	141.0	142.2	142.2	146.8	145.3	147.7	146.9	146.7	146.9	146.7	143.0	143.0	143.0
53	46.50	13 R	141.0	141.0	145.7	143.5	143.2	143.4	143.5	145.0	144.1	142.6	143.6	143.6	143.6	143.6	143.6	143.6
54	45.50	13 R	142.2	142.2	141.4	142.6	141.8	142.6	144.8	143.6	143.4	143.2	143.8	143.8	143.8	144.0	144.0	143.4
55	44.50	13 R	145.5	150.4	147.7	148.6	148.1	148.6	142.4	141.6	141.9	140.4	141.6	141.6	141.6	139.3	139.3	139.3
56	49.00	BL	142.1	142.8	141.9	141.9	140.2	141.8	143.7	142.7	142.6	142.6	147.3	147.3	147.3	144.1	144.1	144.1
57	48.00	BL	143.2	143.9	144.4	143.6	143.6	143.8	144.1	146.2	142.6	142.6	143.3	143.3	143.3	143.7	143.7	143.7
58	47.00	BL	136.1	136.1	139.2	139.8	138.7	139.8	143.6	144.2	144.2	144.4	144.2	144.2	144.2	144.2	144.2	143.5
59	46.00	BL	142.1	142.3	145.4	140.3	142.5	142.5	165.4	165.2	143.8	143.8	144.8	144.8	144.8	145.9	145.9	145.9
60	45.00	BL	142.3	141.5	144.8	144.7	142.7	143.4	147.4	146.7	146.4	146.4	145.5	145.5	145.5	142.3	142.3	142.3
61	49.50	13 L	161.3	140.9	160.9	140.6	140.9	140.9	144.3	144.3	144.5	141.4	143.1	143.1	143.1	143.3	143.3	143.3
62	48.50	13 L	139.5	141.9	136.7	139.6	139.4	139.6	140.8	142.2	142.8	142.8	139.6	141.4	141.4	141.4	141.4	141.4
63	47.50	13 L	142.7	139.0	162.8	141.5	141.5	145.5	145.5	144.5	141.9	141.9	143.7	143.7	143.7	143.9	143.9	143.9
64	49.50	103 L	144.4	142.4	143.5	142.3	143.1	143.1	146.8	143.2	143.2	146.2	145.5	145.5	145.5	145.8	145.8	145.8
65	48.50	103 L	145.8	143.4	143.7	142.3	143.8	143.8	145.8	146.7	146.7	148.2	151.0	147.9	147.9	147.9	147.9	147.9
200	1.00	5 R	141.9	142.7	141.7	142.3	142.3	142.3	142.5	143.4	141.5	141.5	142.0	142.0	142.0	142.0	142.0	142.0
201	2.00	5 R	142.3	142.3	142.9	142.8	143.6	142.9	146.2	146.2	146.2	146.2	145.1	145.1	145.1	144.8	144.8	144.8
202	3.00	5 R	140.5	141.3	140.6	140.6	143.2	141.4	144.5	143.3	143.3	143.3	145.7	145.7	145.7	143.8	143.8	143.8
203	4.00	5 R	144.5	142.4	142.4	142.1	142.1	142.8	139.8	142.2	142.2	141.9	141.9	141.9	141.9	141.9	141.9	141.9
204	4.50	5 L	141.3	145.7	142.7	142.7	143.1	143.2	144.2	145.1	145.1	145.1	144.5	144.5	144.5	144.5	144.5	144.5
205	3.50	5 L	142.4	142.6	141.8	141.8	143.1	142.5	142.5	143.8	143.8	143.8	142.4	142.4	142.4	143.5	143.5	143.5
206	2.50	5 L	141.4	141.2	141.0	140.9	140.1	140.1	140.9	146.0	146.0	146.0	145.1	145.1	145.1	145.1	145.1	145.1
207	1.50	5 L	142.6	145.5	145.5	145.5	145.8	144.9	144.9	142.2	142.2	142.2	142.5	142.5	142.5	142.5	142.5	142.5
208	1.50	15 R	144.0	143.9	146.3	146.3	144.8	144.8	145.9	148.8	148.8	145.8	146.9	146.9	146.9	146.9	146.9	146.9
209	2.50	15 R	140.2	143.6	143.6	141.6	144.3	142.4	142.4	144.5	145.3	145.3	144.5	144.5	144.5	144.5	144.5	144.5
210	3.50	15 R	143.8	145.0	144.0	144.8	145.0	146.2	146.2	143.8	143.8	143.8	142.4	142.4	142.4	142.4	142.4	142.4
211	4.50	15 R	140.9	141.2	140.4	140.8	140.4	140.4	140.4	140.4	140.4	140.4	144.1	144.1	144.1	143.7	143.7	143.7
213	3.00	15 L	143.1	145.2	144.6	144.6	143.0	144.0	144.0	148.5	148.5	148.5	146.9	146.9	146.9	147.4	147.4	147.4
214	2.00	15 L	146.7	144.8	147.7	146.7	146.7	146.7	146.7	147.6	147.6	147.6	146.4	146.4	146.4	145.7	145.7	145.7
215	1.00	15 L	144.2	143.9	144.0	144.0	144.0	144.0	144.9	145.8	145.8	145.8	142.2	142.2	142.2	141.8	141.8	141.8

Table B-3 (Cont'd.)

OCEAN CITY MUNICIPAL AIRPORT
TERMINAL APRON AND CONNECTOR TAXIWAY OVERLAY

MDT NO.	STA ft	OFFSET ft	TRUEING/LEVELING COURSE				FINAL SURFACE COURSE				THIN LIFT UNIT WT *****	
			NUCLEAR UNIT WTS				NUCLEAR UNIT WTS					
			1	2	3	4	1	2	3	4		
NEW PARALLEL TAXIWAY												
100	49.00	5 L	145.1	144.4	143.9	144.6	144.0	143.6	143.9	144.2	143.9	
101	48.50	5 L	143.2	146.3	143.3	144.6	142.6	143.6	143.3	143.2	143.3	
102	48.00	5 L	141.1	141.5	142.5	141.0	140.3	142.6	142.2	142.2	141.8	
103	47.50	5 L	161.8	162.1	141.2	142.2	144.0	143.4	141.0	142.7	141.0	
104	47.00	5 L	148.2	144.4	144.3	146.5	145.9	144.7	145.6	145.2	144.4	
105	46.50	5 L	146.9	146.3	145.4	145.8	145.6	146.4	148.0	144.1	146.2	
106	46.00	5 L	144.6	146.5	146.1	145.2	145.2	143.1	142.3	141.9	142.4	
107	45.50	5 L	167.1	147.2	148.0	145.3	146.9	161.2	141.4	140.7	141.6	
108	49.25	5 R	142.4	140.7	140.8	140.3	141.1	142.1	145.5	144.1	144.5	
109	48.75	5 R	148.5	150.4	149.6	149.3	149.5	143.6	143.7	145.3	145.1	
110	48.25	5 R	150.0	149.7	149.1	148.1	148.7	145.8	145.3	148.2	147.0	
111	47.75	5 R	145.7	144.1	143.4	144.7	144.5	143.1	146.2	147.8	144.6	
112	47.25	5 R	161.9	145.0	143.2	142.5	143.2	144.4	143.9	145.6	144.3	
113	46.75	5 R	162.4	142.2	142.3	143.0	142.5	143.7	143.0	145.1	144.5	
114	46.25	5 R	144.5	145.1	145.0	143.6	144.6	146.0	143.5	142.9	144.5	
115	45.75	5 R	146.5	146.4	145.6	145.6	145.6	144.9	144.9	145.6	145.1	
116	45.25	5 R	144.7	145.9	145.2	147.3	145.8	143.3	142.7	142.8	143.0	
117	49.00	15 R	147.8	148.4	147.8	146.7	147.7	144.5	144.5	144.7	144.5	
118	48.00	15 R	149.5	148.9	148.9	149.6	149.2	142.5	143.2	144.7	143.3	
119	47.00	15 R	146.6	145.2	145.5	145.0	145.6	143.1	142.8	143.1	143.1	
120	46.00	15 R	144.7	146.5	145.5	146.3	145.8	140.4	139.9	140.7	140.4	
121	44.00	15 R	143.7	142.4	143.7	141.8	142.9	144.6	145.9	144.4	144.8	
122	43.00	15 R	145.6	145.6	146.6	145.5	145.8	143.2	143.9	141.9	142.7	
123	42.00	15 R	143.0	142.5	142.5	143.8	142.9	138.4	137.5	139.6	138.6	
124	41.00	15 R	143.0	144.3	143.8	144.2	143.8	163.5	145.1	144.3	144.1	
125	41.50	15 L	145.7	141.0	141.9	141.4	142.8	142.9	143.4	144.4	144.3	
126	42.50	15 L	144.7	144.8	145.4	143.5	144.6	162.2	142.8	141.5	142.6	
127	43.50	15 L	144.1	146.3	143.1	146.4	145.0	148.1	147.0	147.2	147.8	
128	44.50	15 L	148.2	148.3	147.6	148.0	148.0	144.7	144.9	146.3	145.5	
129	45.50	15 L	141.1	140.3	139.4	140.3	140.3	147.2	146.2	145.5	146.6	
130	44.50	15 L	141.9	141.4	144.4	143.1	142.7	144.8	145.5	142.2	143.6	
131	43.50	15 L	141.6	140.0	141.7	139.4	140.7	144.0	144.3	145.3	144.6	
132	42.50	15 L	143.9	144.0	141.5	141.4	142.7	148.1	147.0	149.3	149.1	
133	44.00	5 L	149.8	150.0	149.7	150.6	149.9	141.9	142.5	142.6	140.6	
134	43.00	5 L	147.1	146.6	144.4	145.5	145.9	144.0	140.1	142.3	142.1	
135	42.00	5 L	145.9	145.0	144.7	145.0	145.2	143.8	143.0	143.7	143.5	
136	41.00	5 L	144.8	145.8	145.4	145.4	145.3	146.1	144.1	144.8	145.0	
137	41.50	5 L	142.8	143.0	143.3	143.5	143.6	147.2	145.3	146.1	146.0	
138	42.50	5 L	143.0	143.9	143.4	141.8	143.0	144.3	144.7	143.6	143.7	
139	43.50	5 L	148.8	147.0	148.8	148.6	148.8	143.9	142.0	142.6	142.6	

APPENDIX C

MARSHALL ACCEPTANCE TEST RESULTS

9/26/87

TABLE C-1
TEREBORO RUNWAY 1-19 OVERLAY
LABORATORY MARSHALL MIX PROPERTIES

DATE	LOT	SUBLT	6mb	6mm	% AC STABILITY	FLOW	% VOIDS	UNIT WT	
7-13-87	7	1	2.547	2.617	5.1	2394	10.3	2.7	158.9
		2	2.531	2.617	5.1	2211	9.7	3.3	157.9
		3	2.540	2.617	5.1	2503	11.0	2.9	158.5
		4	2.537	2.617	5.1	2503	11.0	3.0	158.3
		Avg	2.539	2.617	5.1	2403	10.5	3.0	158.4
7-14-87	8	1	2.498	2.614	5.1	2281	10.3	4.4	155.9
		2	2.523	2.614	5.1	2465	11.3	3.5	157.4
		3	2.524	2.614	5.1	2315	11.3	3.5	157.5
		Avg	2.515	2.614	5.1	2354	11.0	3.8	156.9
7-15-87	9	1	2.535	2.613	5.2	2142	10.0	3.0	158.2
		2	2.529	2.613	5.2	2177	10.3	3.2	157.8
		3	2.527	2.613	5.2	2177	10.3	3.3	157.7
		4	2.522	2.613	5.2	2142	10.0	3.5	157.4
		Avg	2.528	2.613	5.2	2160	10.2	3.3	157.8
7-16-87	10	1	2.528	2.623	5.2	2357	10.7	3.6	157.7
		2	2.527	2.623	5.2	2541	11.7	3.7	157.7
		3	2.529	2.623	5.2	2318	10.7	3.5	157.6
		4	2.532	2.623	5.2	2003	10.3	3.5	158.0
		Avg	2.529	2.623	5.2	2305	10.9	3.6	157.8
7-20-87	12	1	2.551	2.615	5.2	2699	11.7	2.5	159.2
		2	2.548	2.615	5.2	2318	11.0	2.6	159.0
		3	2.538	2.615	5.2	2247	11.0	2.9	158.4
		4	2.525	2.615	5.2	2427	12.0	3.4	157.6
		Avg	2.541	2.615	5.2	2423	11.4	2.9	158.5
7-21-87	13	1	2.528	2.606	5.2	2229	12.7	3.0	157.7
		2	2.533	2.606	5.2	2354	11.7	2.8	158.1
		3	2.517	2.606	5.2	2303	11.3	3.4	157.0
		4	2.527	2.606	5.2	2211	9.7	3.1	157.7
		Avg	2.526	2.606	5.2	2274	11.4	3.1	157.6
7-22-87	14	1	2.505	2.593	5.1	2177	9.7	3.4	156.3
		2	2.535	2.593	5.1	2320	10.7	2.2	158.2
		3	2.517	2.593	5.1	2177	11.3	2.9	157.1
		4	2.503	2.593	5.1	2125	10.7	3.5	156.2
		Avg	2.515	2.593	5.1	2200	10.6	3.0	157.0

9-26-87

TABLE C-2

LEESBURG PARALLEL TAXIWAY OVERLAY

LABORATORY MARSHALL MIX PROPERTIES

DATE	LOT	SUBLT	Geb	Gem	% AC STABILITY	FLOW	% VOIDS	UNIT WT	
8-4-87	1	1	2.608	2.677	5.17	2895	13.7	2.6	162.7
		2	2.605	2.677	5.17	2895	11.7	2.7	162.5
		3	2.608	2.678	5.38	2929	13.0	2.6	162.8
		4	2.597	2.675	5.38	2783	12.7	2.9	162.1
		Avg	2.605	2.677	5.3	2826	12.8	2.7	162.5

9/26/87

TABLE C-3

OCEAN CITY MUNICIPAL AIRPORT
TERMINAL APRON AND CONNECTOR TAXIWAY OVERLAY

MARSHALL MIX PROPERTIES

DATE	LOT	SUBLOT	Gmb	Gmm	% AC STABILITY	FLOW	% VOIDS	UNIT WT	
<hr/>									
5-13-87	5	1	2.450	2.502	5.3	2289	10.8	2.1	152.9
		2	2.419	2.502	5.3	2013	9.8	3.3	150.9
		3	2.426	2.502	5.4	2303	11.0	3.1	151.4
		Avg	2.432	2.502	5.3	2202	10.5	2.6	151.7
<hr/>									
5-14-87	6	1	2.440	2.500	5.6	2567	10.7	2.4	152.3
		2	2.447	2.500	5.6	2244	12.0	2.1	152.7
		3	2.447	2.500	5.6	2116	12.3	2.1	152.7
		4	2.457	2.500	5.6	2328	10.8	1.9	153.3
		Avg	2.450	2.500	5.6	2229	11.7	2.0	152.9

DATE	LOT	STA ft	OFFSET ft	NDT NO.	CORE NO.	DSM k/in	CORE			341:			
							UNIT WT pcf	MARSHALL IN PLACE DENSITY AIR VOIDS	*UNIT WT **pcf	DENSITY AIR VOIDS %			
5-13-87	5	47.00	4 L	104	3-1	521	147.4	97.1%	5.6%	147.2	97.0%	5.7%	
		42.50	5 R	138	3-2	311	147.4	97.1%	5.6%	146.7	96.7%	6.0%	
		2.50	4 L	206	4-1	339	146.4	96.5%	6.2%	146.3	97.7%	5.0%	
		46.75	95 R	15	4-2	392	148.5	97.9%	4.9%	148.2	97.7%	5.1%	
		46.98	28 R	47	4-4	566	146.6	96.6%	6.1%	146.7	96.7%	6.0%	
		48.35	103 L		5-4		150.4	98.4%	3.6%	149.6	98.0%	4.1%	
							Avg	147.8	97.3%	5.3%	147.8	97.3%	5.7%

TABLE D-1
TETERBORO DATA BASE
NUCLEAR DENSITIES

DATE	LOT	STA	OFFSET	MDT	NO.	TEMP CORR	THIN LIFT		
							DSM	DSM	UNIT WT MARSHALL IN PLACE
							k/in	k/in	pcf DENSITY AIR Voids
7-13-87	7	31.00	56 R	1	836	986	152.5	96.3%	6.6%
		31.00	6.5 R	37	868	1085	154.3	97.4%	5.5%
		31.00	43 L	73	430	473	152.0	96.0%	6.9%
		32.00	32 R	19	517	647	148.8	94.8%	8.8%
7-14-87	8	32.00	18 L	55	684	794	151.4	96.5%	7.2%
		32.00	68 L	91	921	1023	150.3	95.8%	7.9%
		33.00	56 R	2	429	507	148.6	94.7%	8.9%
		33.00	6.5 R	38	761	951	152.3	97.0%	6.6%
		33.00	43 L	74	488	537	148.9	94.9%	8.7%
		34.00	32 R	20	587	734	145.1	92.5%	11.0%
		34.00	18 L	56	466	541	151.2	96.3%	7.3%
		34.00	68 L	92	1273	1413	148.9	94.9%	8.7%
		35.00	56 R	3	846	999	148.3	94.5%	9.1%
		35.00	6.5 R	39	732	914	150.8	96.1%	7.5%
		35.00	43 L	75	689	758	150.3	95.8%	7.9%
		36.00	32 R	21	722	902	148.9	94.9%	8.7%
		36.00	18 L	57	651	755	153.4	97.7%	6.0%
		36.00	68 L	93	1064	1181	150.6	96.0%	7.7%
7-15-87	9	37.15	56 R	4	966	1139	150.9	95.6%	7.5%
		37.15	6.5 R	40	952	1190	155.6	98.6%	4.6%
		37.15	43 L	76	530	583	149.2	94.6%	8.5%
		38.00	32 R	22	701	876	151.6	96.1%	7.0%
		38.00	18 L	58	781	906	150.2	95.2%	7.9%
		38.00	68 L	94	1129	1253	151.4	96.0%	7.1%
		39.00	56 R	5	891	1051	151.4	96.0%	7.1%
		39.00	6.5 R	41	826	1032	153.5	97.3%	5.9%
		39.00	43 L	77	643	708	153.3	97.2%	6.0%
		40.00	32 R	23	562	702	151.4	96.0%	7.1%
		40.00	18 L	59	755	876	154.2	97.7%	5.4%
		40.00	68 L	95	974	1081	149.5	94.8%	8.3%
		41.00	56 R	6	1395	1646	152.8	96.8%	6.3%
		41.00	6.5 R	42	886	1107	154.7	98.1%	5.1%
		41.00	43 L	78	781	859	149.8	94.9%	8.1%
		42.00	32 R	24	865	1082	152.8	96.8%	6.3%
		42.00	18 L	60	929	1013	156.3	99.1%	4.1%
		42.00	68 L	96	883	980	150.1	95.1%	7.9%
7-16-87	10	43.00	56 R	7	1224	1444	150.0	95.1%	8.4%
		43.00	6.5 R	43	974	1217	153.0	97.0%	6.5%
		43.00	43 L	79	716	787	152.7	96.8%	6.7%
		44.00	32 R	25	629	786	151.6	96.1%	7.4%
		44.00	18 L	61	898	979	150.3	95.2%	8.2%
		44.00	68 L	97	723	803	151.4	95.9%	7.5%

Table D-1 (Cont'd.)

DATE	LOT	STA	OFFSET	NDT	TEMP CORR	THIN LIFT		
						DSM	DSM	UNIT WT MARSHALL IN PLACE
						k/in	k/in	pcf DENSITY AIR Voids
7-20-87	12	45.00	56 R	8	521	615	150.3	95.2% 8.2%
		45.00	6.5 R	44	897	1121	148.7	94.2% 9.1%
		45.00	43 L	80	627	690	149.9	95.0% 8.4%
		46.00	32 R	26	401	501	150.2	95.2% 8.2%
		46.00	18 L	62	640	698	152.6	96.7% 6.8%
		46.00	68 L	98	927	1029	149.7	94.9% 8.5%
		47.00	56 R	9	1058	1248	150.6	95.4% 8.0%
		47.00	6.5 R	45	594	743	151.7	96.1% 7.3%
		47.00	43 L	81	444	489	151.6	96.1% 7.4%
		48.00	32 R	27	816	1127	150.0	95.1% 8.4%
		48.00	18 L	63	926	1028	152.1	96.4% 7.1%
		48.00	68 L	99	877	973	151.7	96.1% 7.3%
		49.00	56 R	10	858	1072	152.4	96.6% 6.9%
		49.00	6.5 R	46	936	1283	153.1	97.0% 6.5%
		49.00	43 L	82	577	647	153.6	97.3% 6.2%
		50.00	32 R	28	858	1218	154.3	97.8% 5.7%
		50.00	18 L	64	848	961	153.7	97.4% 6.1%
		50.00	68 L	100	714	814	153.5	97.3% 6.2%
7-21-87	13	51.00	56 R	11	621	789	153.5	96.8% 5.9%
		51.00	6.5 R	47	1238	1745	153.3	96.7% 6.1%
		51.00	43 L	83	976	1103	152.3	96.1% 6.7%
		52.00	32 R	29	865	1229	154.7	97.6% 5.2%
		52.00	18 L	65	956	1071	153.3	96.7% 6.1%
		52.00	68 L	101	860	980	152.6	96.3% 6.5%
		53.00	56 R	12	978	1242	153.3	96.7% 6.1%
		53.00	6.5 R	48	1193	1682	151.9	95.8% 6.9%
		53.00	43 L	84	883	998	153.3	96.7% 6.1%
		54.00	32 R	30	907	1287	154.4	97.4% 5.4%
		54.00	18 L	66	1057	1184	151.3	95.4% 7.3%
		54.00	68 L	102	1026	1170	151.0	95.3% 7.5%
		55.00	56 R	13	1408	1788	153.4	96.8% 6.0%
		55.00	6.5 R	49	1941	2737	154.9	97.7% 5.1%
		55.00	43 L	85	1663	1879	155.4	98.0% 4.8%
		56.00	32 R	31	1137	1615	153.6	97.4% 5.5%
		56.00	18 L	67	1309	1467	153.5	97.4% 5.6%
		56.00	68 L	103	1291	1472	154.9	98.3% 4.7%
		57.00	56 R	14	1110	1409	153.0	97.1% 5.9%
		57.00	6.5 R	50	1083	1527	154.6	98.1% 4.9%
		57.00	43 L	86	1130	1277	152.7	96.9% 6.1%
		58.00	32 R	32	998	1417	153.9	97.6% 5.4%
		58.00	18 L	68	1183	1325	154.2	97.8% 5.2%
		58.00	68 L	104	1327	1512	154.7	98.1% 4.9%

Table D-1 (Cont'd.)

DATE	LOT	STA ft	OFFSET ft	NDT NO.	TEMP CORR		THIN LIFT			
					DSM	DSM	UNIT WT	MARSHALL IN PLACE		
					k/in	k/in	pcf	DENSITY	AIR VOIDS	
7-22-87	14	59.00	56 R	15	802	1018	150.6	95.5%	7.4%	
		59.00	6.5 R	51	969	1366	151.1	95.9%	7.1%	
		59.00	43 L	87	961	1086	151.6	96.2%	6.8%	
		60.00	32 R	33	675	958	152.9	97.0%	6.0%	
		60.00	18 L	69	637	713	152.2	96.6%	6.4%	
		60.00	68 L	105	830	946	151.8	96.3%	6.7%	
		61.00	56 R	16	612	777	150.8	95.7%	7.3%	
		61.00	6.5 R	52	868	1259	151.3	96.0%	7.0%	
		61.00	43 L	88	622	709	153.4	97.3%	5.7%	
		62.00	32 R	34	658	934	152.1	96.5%	6.5%	
		62.00	18 L	70	705	790	155.4	98.6%	4.4%	
		62.00	68 L	106	599	683	154.0	97.7%	5.3%	
		63.00	56 R	17	663	842	152.8	97.4%	5.6%	
		63.00	6.5 R	53	757	1097	155.1	98.8%	4.1%	
		63.00	43 L	89	772	880	153.4	97.7%	5.2%	
		64.00	32 R	35	706	1003	152.4	97.1%	5.8%	
		64.00	18 L	71	787	881	152.3	97.0%	5.9%	
		65.00	56 R	18	788	1000	153.1	97.5%	5.4%	
		65.00	6.5 R	54	727	1055	153.2	97.6%	5.3%	
		65.00	43 L	90	772	880	152.6	97.2%	5.7%	
					AVG	857	1042	152.1	96.5%	
					STD	259	344	1.9	1.2%	
					COV	30.2%	33.0%	1.3%	1.2% 19.1%	

LINEAR REGRESSION — TETERBORO

$$\overline{Z}_{MARS} = a + b \text{ DSM}$$

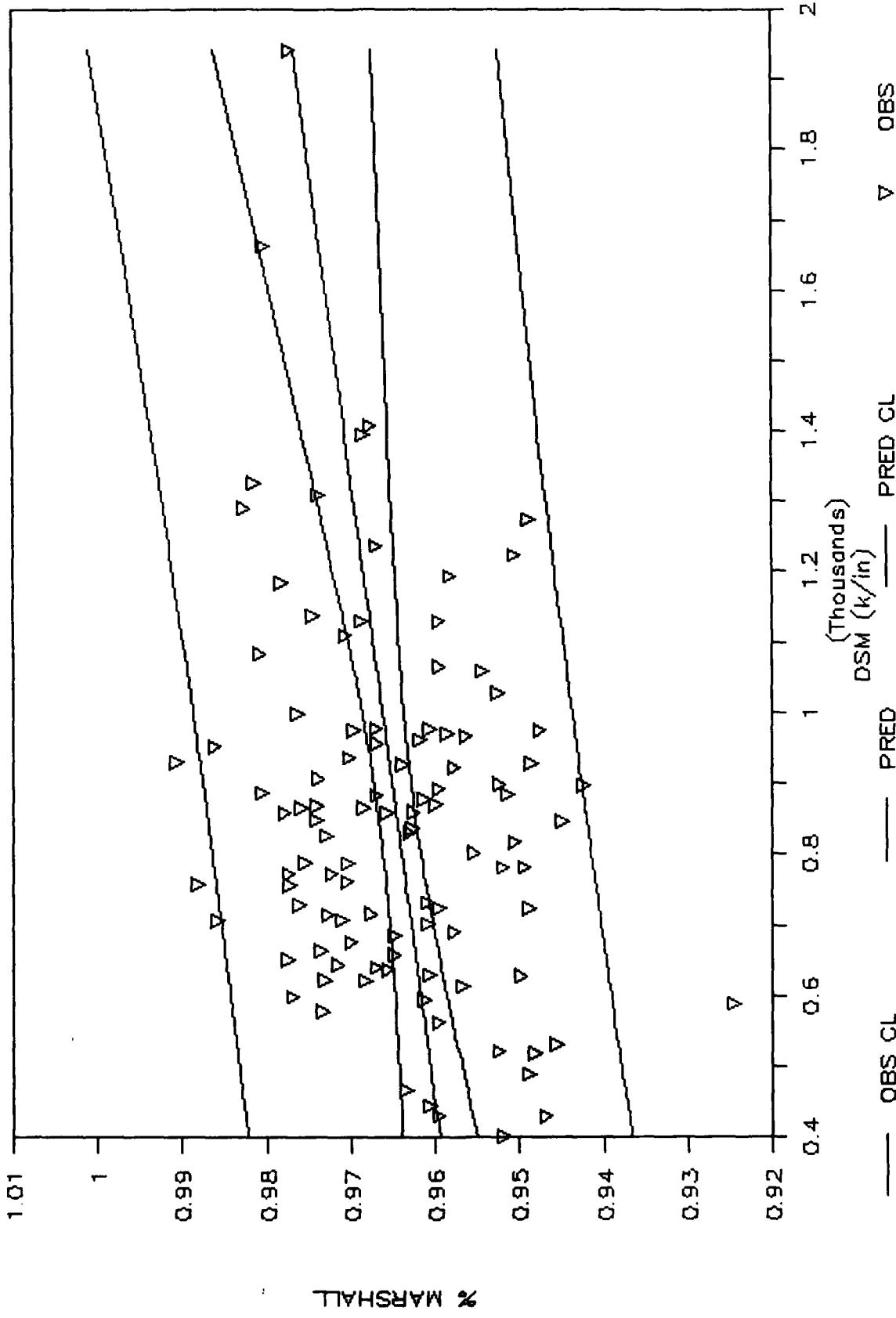


FIGURE 1

MARSHALL DENSITY/DSM (UNADJUSTED)
TETERBORO

LINEAR REGRESSION - TETERBORO

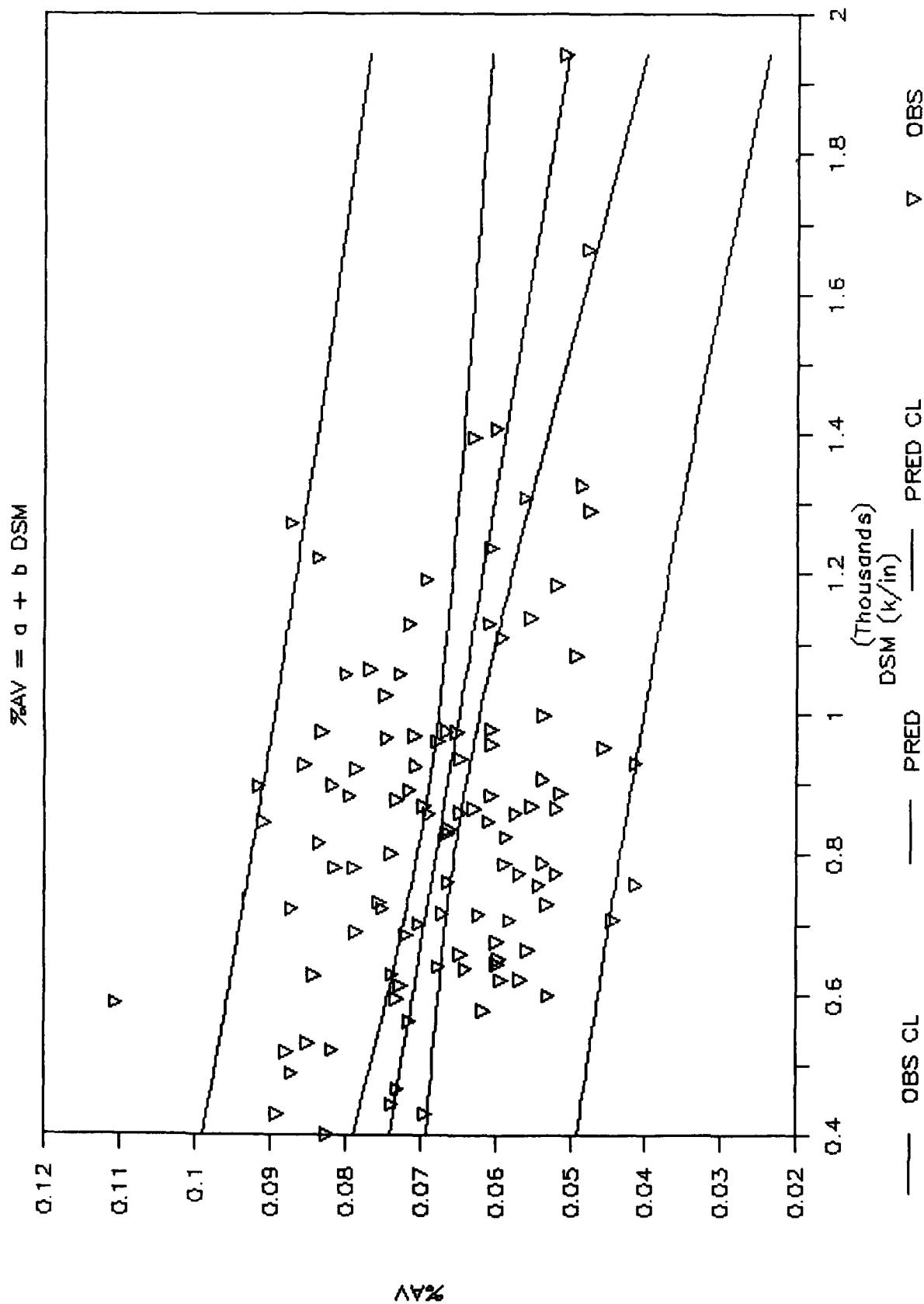


FIGURE 2
IN-PLACE AIR VOIDS/DSM (UNADJUSTED)
TETERBORO

LINEAR REGRESSION - TETERBORO

$$\text{UNITWT} = a + b \text{ DSM}$$

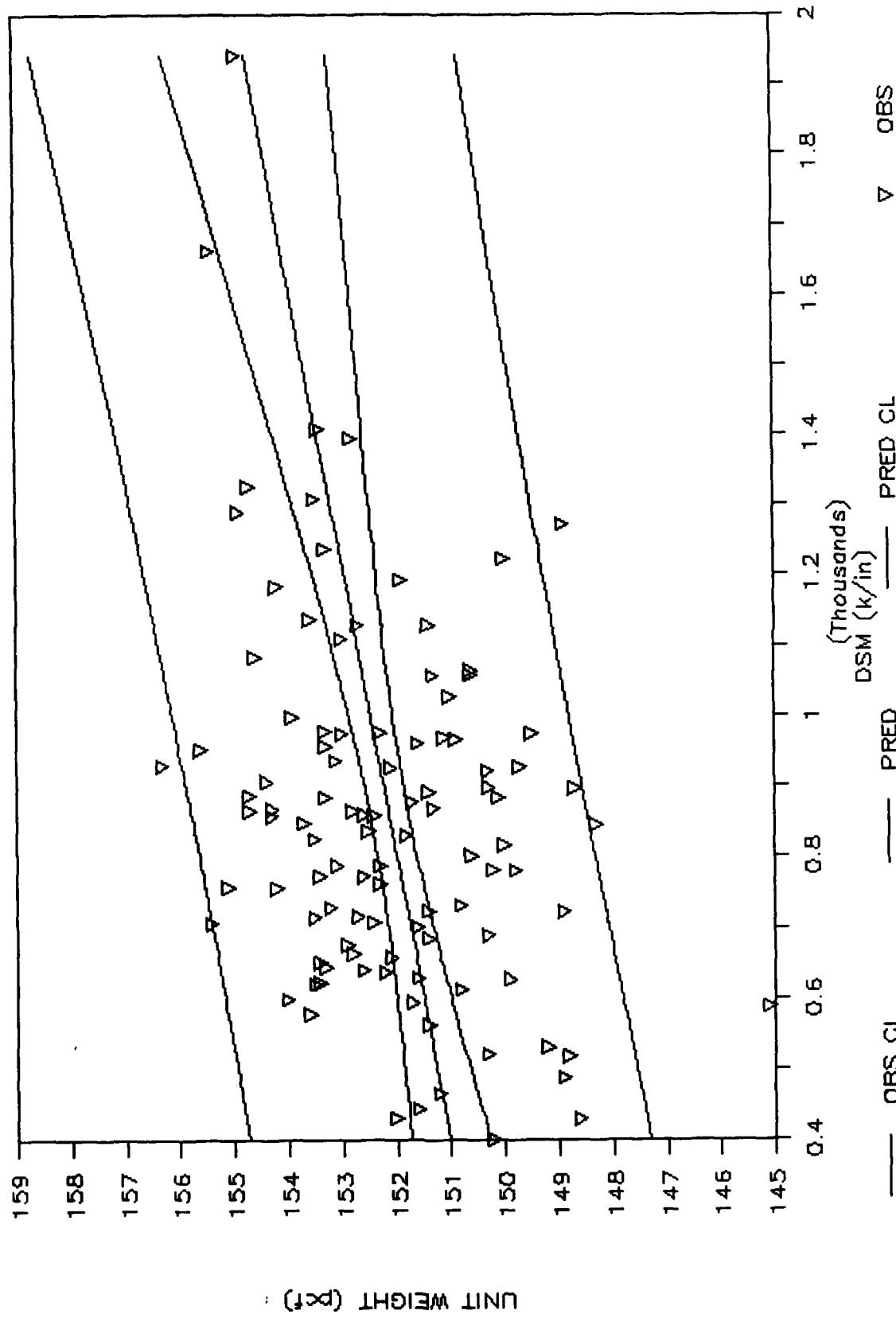


FIGURE 3
UNIT WEIGHT/DSM (UNADJUSTED)
TETERBORO

FIGURE 3

LINEAR REGRESSION - TETERBORO

$$\%MARS = a + b DSMNTC$$

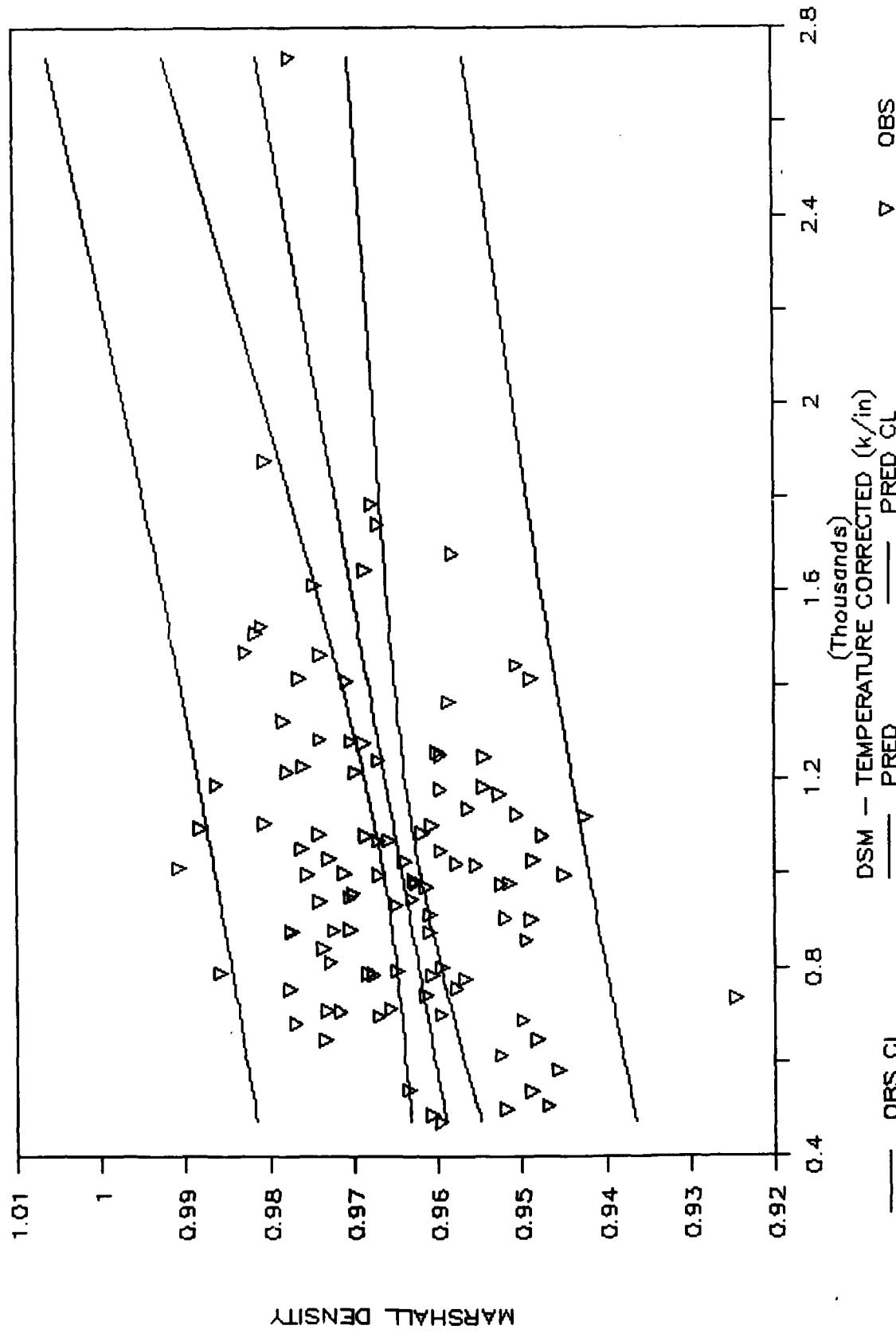


FIGURE 4
MARSHALL DENSITY/DSM (TEMP ADJUSTED)
TETERBORO

LINEAR REGRESSION - TETERBORO

$$\%AV = a + b DSMTC$$

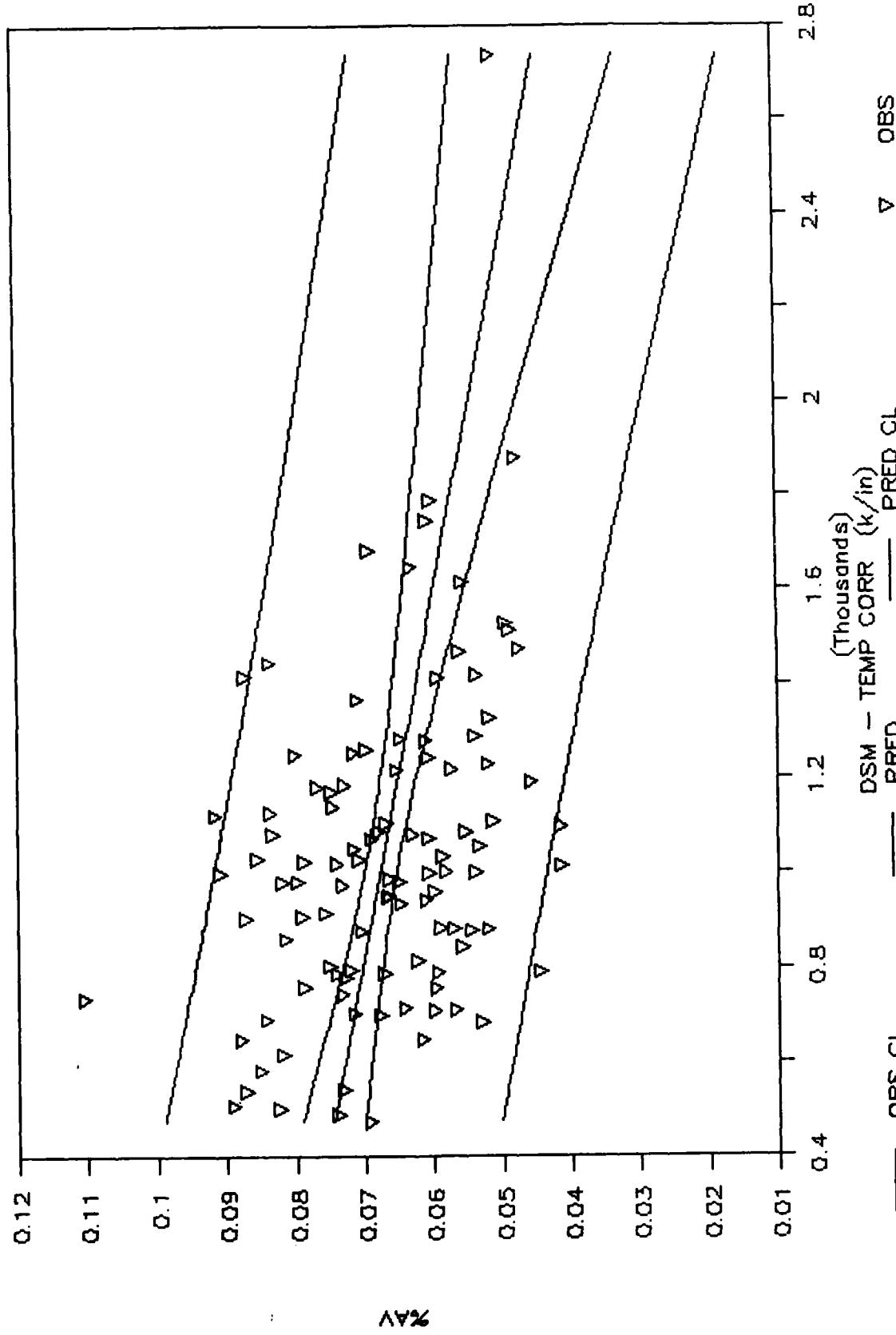


FIGURE 5
IN-PLACE AIR VOIDS/DSM (TEMP ADJUSTED)
TETERBORO

LINEAR REGRESSION - TETERBORO

$$\text{UNITWTN} = a + b \text{ DSMTC}$$

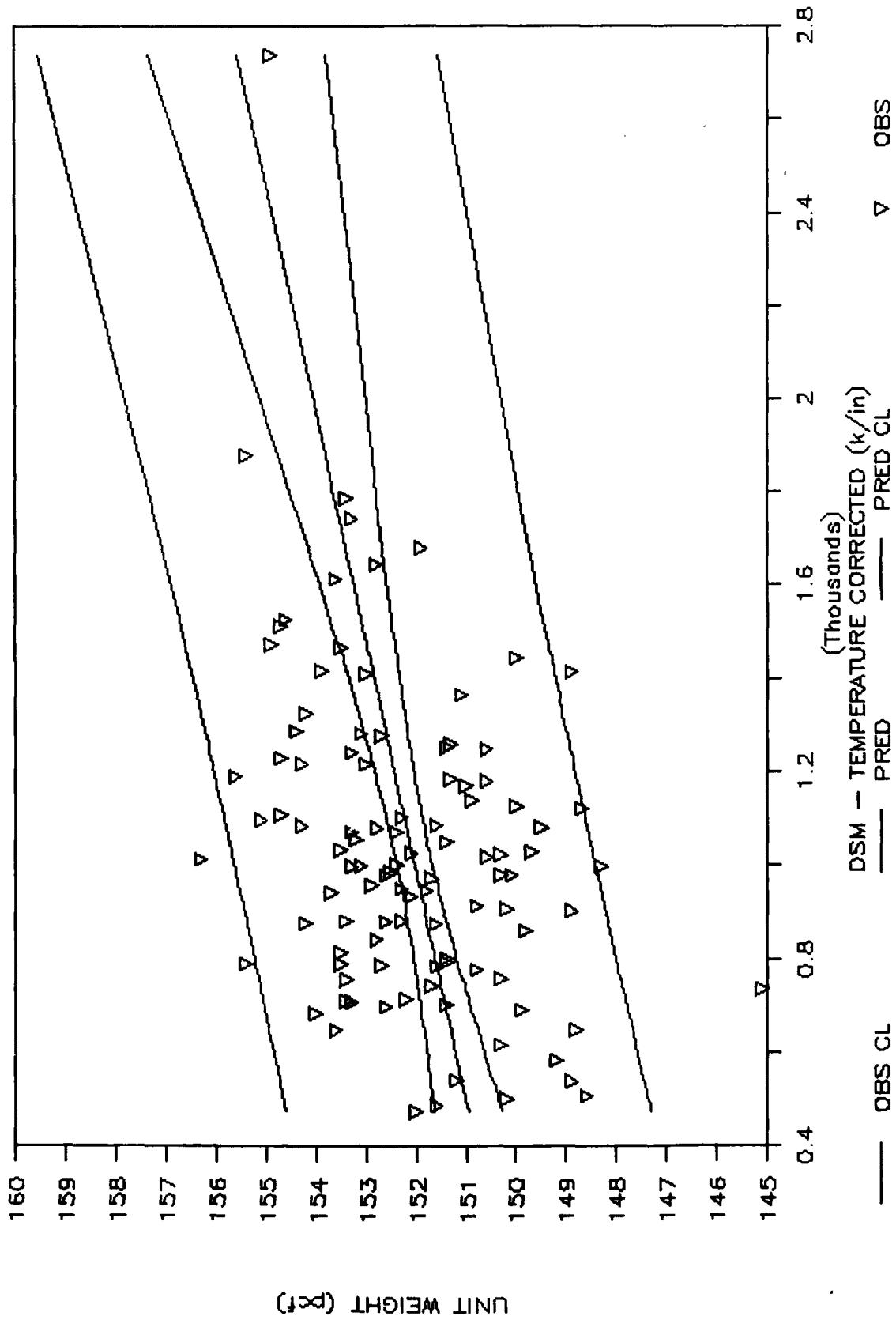


FIGURE 6
UNIT WEIGHT/DSM (TEMP ADJUSTED)
TETERBORO

TABLE D-2
LEESBURG DATA BASE
NUCLEAR DENSITIES

DATE	LOT	STA ft	OFFSET ft	NDT NO.	TEMP CORR		3411		
					DSM k/in	DSM k/in	UNIT WT MARSHALL IN PLACE **pcf DENSITY AIR Voids	TH UNCORR	CORE CORR
<hr/>									
8-4-87	1	0.50	15L	1	350	445	158.5	97.5%	5.1%
		2.50	15L	2	374	475	158.8	97.7%	4.9%
		4.50	15L	3	648	823	156.8	96.5%	6.1%
		6.50	15L	4	273	347	156.1	96.1%	6.5%
		8.50	15L	5	410	521	157.7	97.0%	5.6%
		10.50	15L	6	356	452	154.2	94.9%	7.7%
		12.50	15L	7	399	506	158.2	97.4%	5.3%
		14.50	15L	8	443	562	157.3	96.8%	5.8%
		16.50	15L	9	553	702	156.6	96.3%	6.3%
		18.50	15L	10	290	368	159.7	98.3%	4.4%
		20.50	15L	11	302	384	158.2	97.3%	5.3%
		22.50	15L	12	470	554	155.5	95.6%	6.9%
		24.50	15L	13	302	356	156.4	96.3%	6.3%
		26.50	15L	14	263	310	155.6	95.7%	6.8%
		28.50	15L	15	579	683	153.7	94.6%	8.0%
		30.50	15L	16	329	389	153.0	94.1%	8.4%
		1.00	5L	19	365	464	158.0	97.2%	5.4%
		2.05	5L	20	429	544	153.3	94.4%	8.2%
		3.00	5L	21	414	526	155.7	95.8%	6.8%
		4.10	5L	22	344	436	156.3	96.2%	6.4%
		5.00	5L	23	383	486	156.8	96.5%	6.1%
		6.00	5L	24	394	500	156.7	96.4%	6.2%
		7.00	5L	25	356	452	158.6	97.6%	5.0%
		8.00	5L	26	273	347	156.5	96.3%	6.3%
		9.00	5L	27	374	475	155.1	95.4%	7.1%
		10.00	5L	28	311	39	156.3	96.2%	6.4%
		11.00	5L	29	430	546	156.0	96.0%	6.6%
		12.00	5L	30	385	489	157.9	97.2%	5.5%
		13.00	5L	31	339	430	159.5	98.1%	4.5%
		14.00	5L	32	283	359	156.5	96.3%	6.3%
		15.00	5L	33	326	414	157.4	96.9%	5.7%
		16.00	5L	34	496	629	156.5	96.3%	6.3%
		17.00	5L	35	437	554	155.5	95.7%	6.9%
		19.00	5L	37	364	462	158.3	97.4%	5.2%
		20.00	5L	38	375	476	156.5	96.3%	6.3%
		21.00	5L	39	393	500	155.7	95.8%	6.8%
		22.25	5L	40	508	604	156.3	96.2%	6.4%
		23.00	5L	41	474	564	156.8	96.5%	6.1%
		24.00	5L	42	338	402	157.4	96.9%	5.7%
		25.00	5L	43	385	458	156.1	96.0%	6.6%

Table D-2 (Cont'd.)

3411

DATE	LOT	STA ft	OFFSET ft	NDT NO.	TEMP CORR		UNIT WT MARSHALL IN PLACE **pcf DENSITY AIR Voids
					DSM k/in	DSM k/in	
26.00	5L	44		313	373	157.0	96.6% 6.0%
27.00	5L	45		308	367	156.6	96.4% 6.2%
28.00	5L	46		430	512	155.9	95.9% 6.6%
29.00	5L	47		409	487	156.0	96.0% 6.6%
30.00	5L	48		326	388	155.3	95.6% 7.0%
31.00	5L	49		349	416	155.1	95.5% 7.1%
32.00	5L	50		418	497	155.5	95.7% 6.9%
0.50	15R	53		380	475	155.0	95.3% 7.2%
1.50	5R	54		351	438	157.8	97.1% 5.5%
2.50	5R	55		414	518	160.5	98.8% 3.9%
3.50	5R	56		416	520	158.3	97.4% 5.2%
4.50	5R	57		315	394	156.6	96.4% 6.2%
5.50	5R	58		393	491	160.7	98.9% 3.8%
6.50	5R	59		306	382	160.4	98.7% 3.9%
7.50	5R	60		316	395	157.4	96.8% 5.8%
8.50	5R	61		245	306	156.0	96.0% 6.6%
9.50	5R	62		295	369	157.8	97.1% 5.5%
10.50	5R	63		314	392	158.7	97.6% 5.0%
11.50	5R	64		415	519	156.8	96.5% 6.1%
12.50	5R	65		425	531	157.1	96.7% 5.9%
13.50	5R	66		313	392	157.9	97.1% 5.5%
14.50	5R	67		299	374	159.3	98.0% 4.6%
15.50	5R	68		363	454	158.4	97.5% 5.2%
16.50	5R	69		367	458	157.3	96.8% 5.8%
17.50	5R	70		499	624	158.2	97.4% 5.3%
18.50	5R	71		351	439	159.7	98.3% 4.4%
19.50	5R	72		244	305	155.8	95.9% 6.7%
20.50	5R	73		279	349	157.7	97.0% 5.6%
21.50	5R	74		344	430	159.0	97.8% 4.8%
22.50	5R	75		480	562	158.9	97.8% 4.9%
23.50	5R	76		389	455	157.0	96.6% 6.0%
24.50	5R	77		376	440	159.2	97.9% 4.7%
25.50	5R	78		328	383	159.2	97.9% 4.7%
26.50	5R	79		332	388	154.7	95.2% 7.4%
27.50	5R	80		389	455	155.1	95.4% 7.2%
28.50	5R	81		566	662	155.0	95.4% 7.2%
29.50	5R	82		440	515	154.9	95.3% 7.3%
30.50	5R	83		429	502	157.6	97.0% 5.6%
31.50	5R	84		534	624	156.5	96.3% 6.3%
1.50	15R	88		441	542	156.6	96.4% 6.2%

Table D-2 (Cont'd.)

DATE	LOT	STA	OFFSET	NDT	TEMP CORR		3411								
					DSM	DSM	UNIT WT MARSHALL IN PLACE								
					k/in	k/in	**pcf DENSITY AIR Voids								
<hr/>															
TH UNCORR															
CORE CORR															
3.50	15R	89			308	378	155.2	95.5%	7.1%						
5.50	15R	90			337	415	158.9	97.8%	4.9%						
7.50	15R	91			247	304	158.0	97.2%	5.4%						
9.50	15R	92			338	416	155.7	95.8%	6.8%						
11.50	15R	93			442	544	156.3	96.2%	6.4%						
13.50	15R	94			309	380	155.5	95.6%	6.9%						
15.50	15R	95			448	552	154.9	95.3%	7.3%						
17.50	15R	96			438	538	160.1	98.5%	4.1%						
19.50	15R	97			277	340	156.7	96.4%	6.2%						
21.50	15R	98			319	393	154.2	94.9%	7.7%						
23.50	15L	99			367	429	156.4	96.3%	6.3%						
25.50	15L	100			308	360	155.3	95.5%	7.0%						
27.50	15L	101			277	324	155.3	95.5%	7.0%						
29.50	15L	102			415	485	154.8	95.2%	7.3%						
31.50	15L	103			295	345	155.4	95.6%	7.0%						
		Avg			374	460	156.9	96.5%	6.1%						
		STD			78	95	1.6	1.0%	1.0%						
		COV			20.8%	20.7%	1.0%	1.0%	16.2%						

LINEAR REGRESSION - LEESBURG

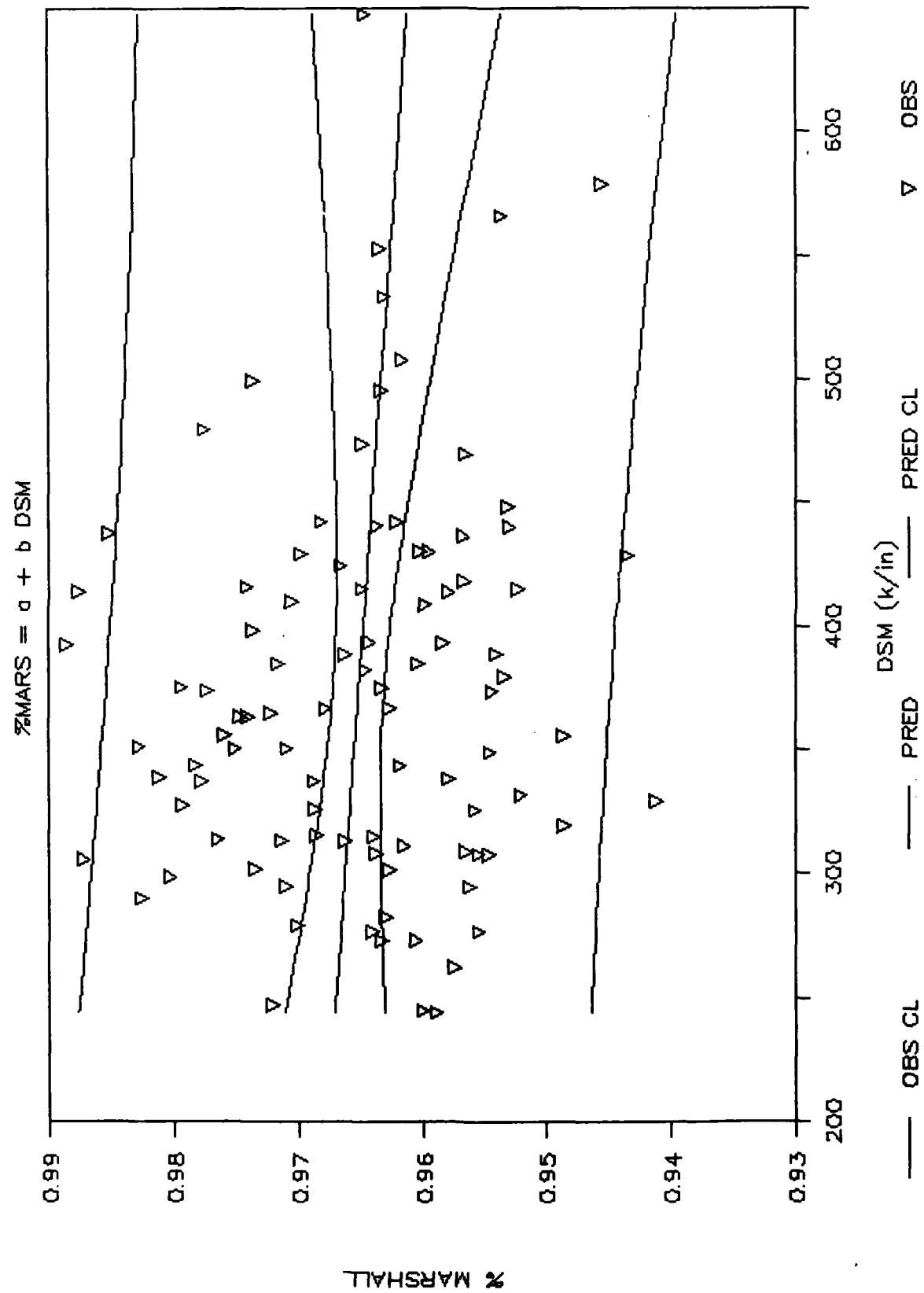


FIGURE 7

MARSHALL DENSITY/DSM (UNADJUSTED)
LEESBURG

LINEAR REGRESSION — LEESBURG

$$\%AV = a + b \text{ DSM}$$

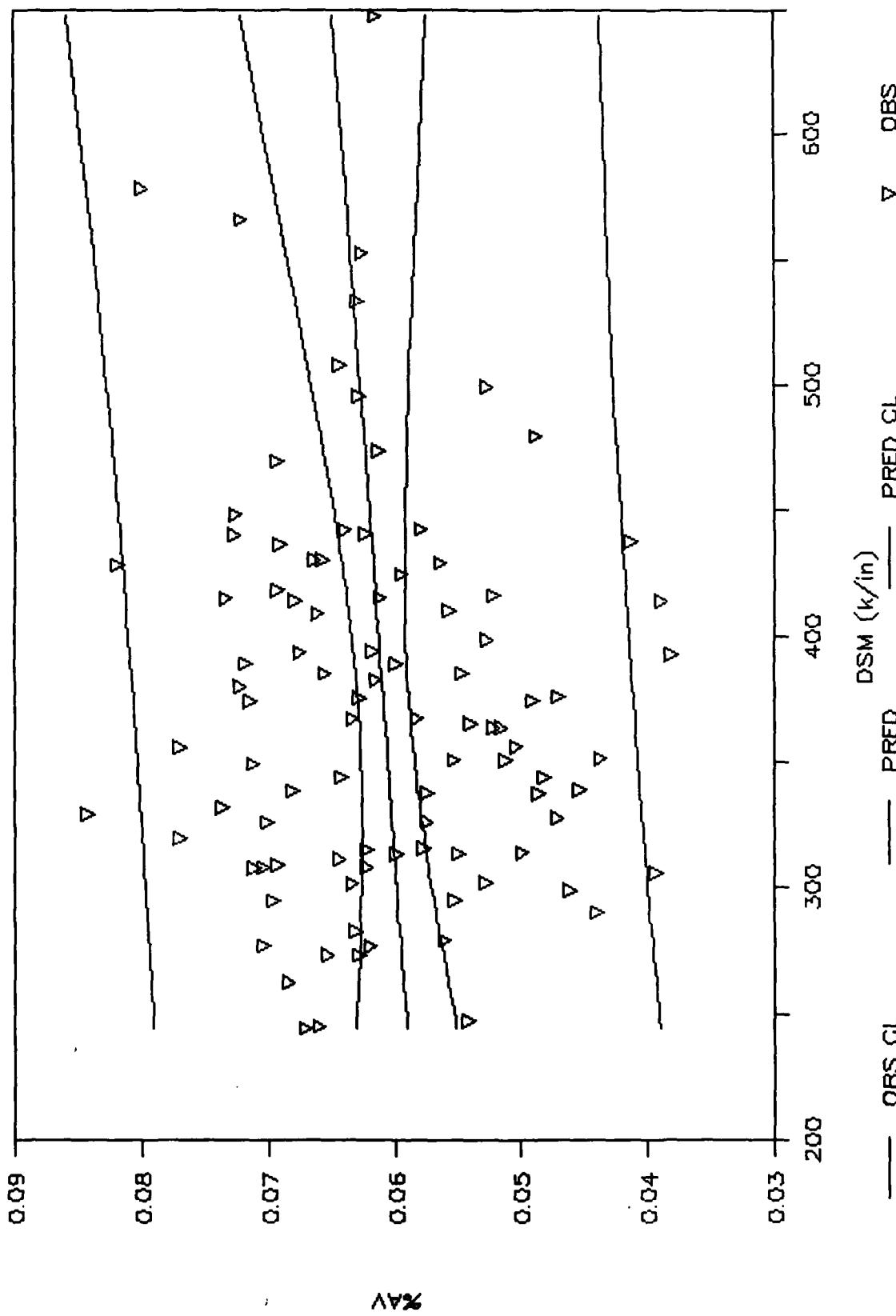


FIGURE 8
IN-PLACE AIR VOIDS/DSM (UNADJUSTED)
LEESBURG

LINEAR REGRESSION - LEESBURG

$$\text{UNITWT} = a + b \text{ DSM}$$

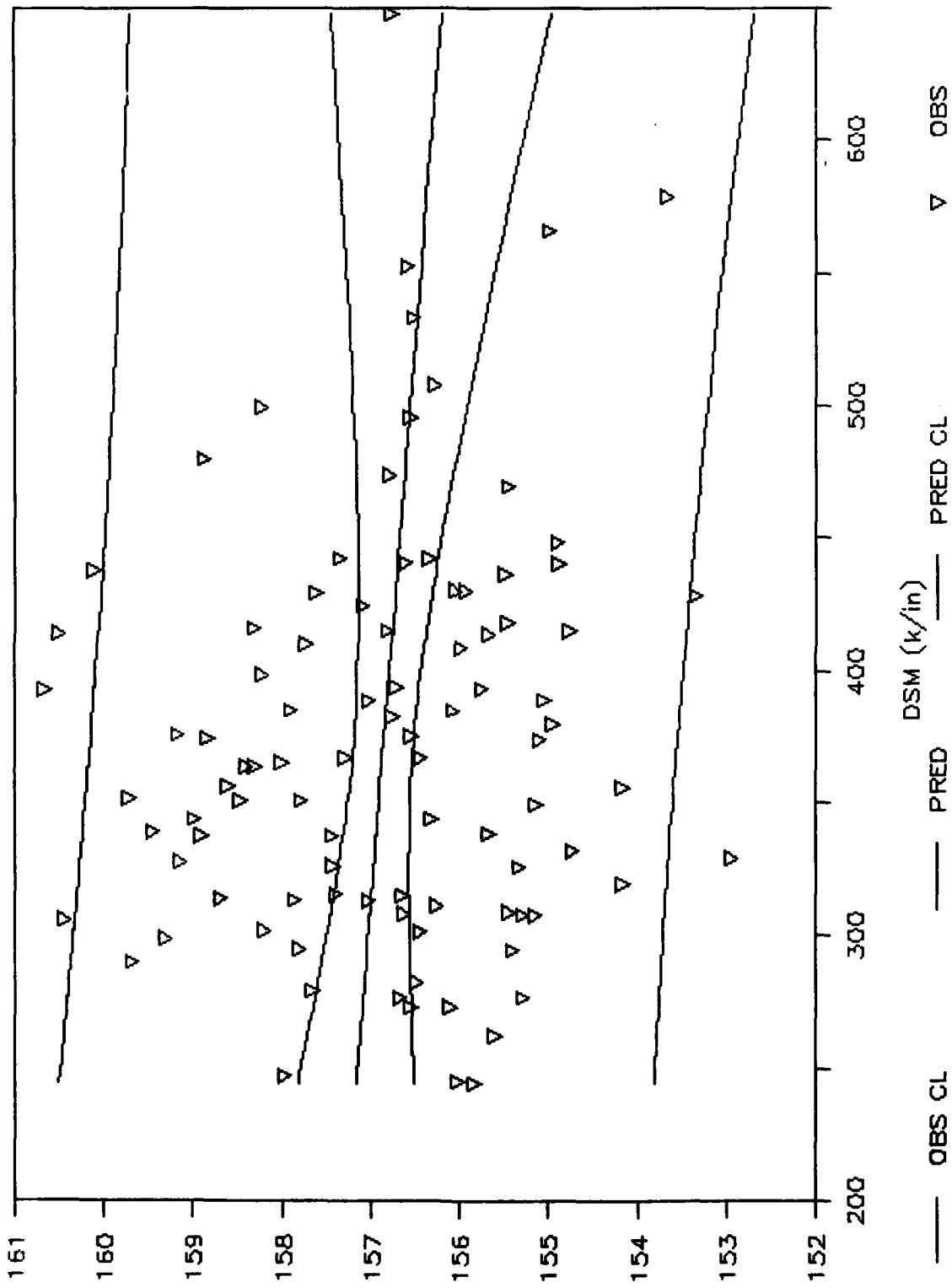


FIGURE 9

UNIT WEIGHT/DSM (UNADJUSTED)
LEESBURG

LINEAR REGRESSION - LEESBURG

$$\% \text{ MARSHALL} = a + b \text{ DSMTC}$$

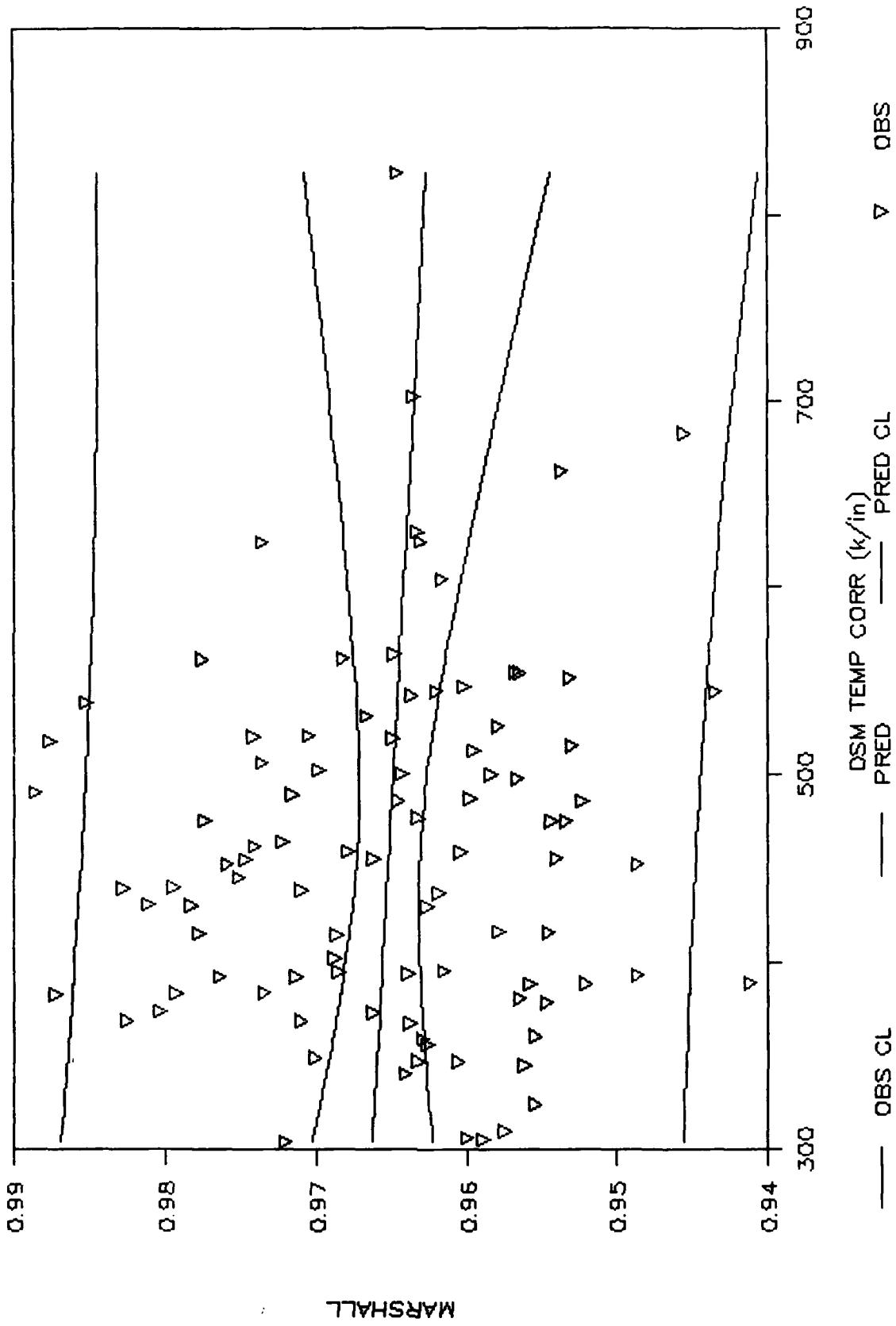
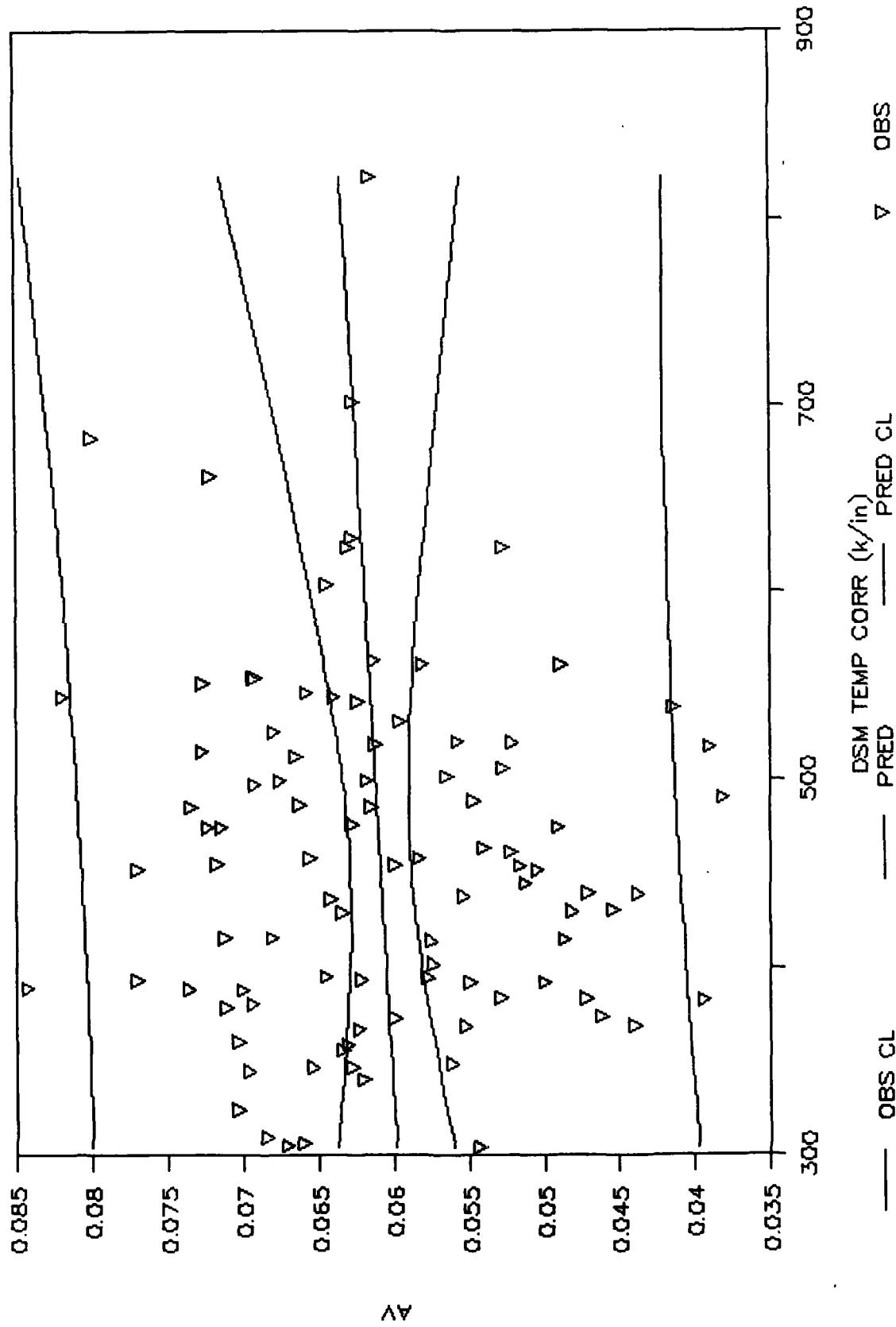


FIGURE 10
MARSHALL DENSITY/DSM (TEMP ADJUSTED)
LEESBURG

LINEAR REGRESSION - LEESBURG

$$\bar{z}_{AV} = a + b \text{ DSMTC}$$



IN-PLACE AIR VOIDS/DSM (TEMP ADJUSTED)
LEESBURG
FIGURE 11

LINEAR REGRESSION - LEESBURG

$$\text{UNIT WT} = a + b \text{ DSMTC}$$

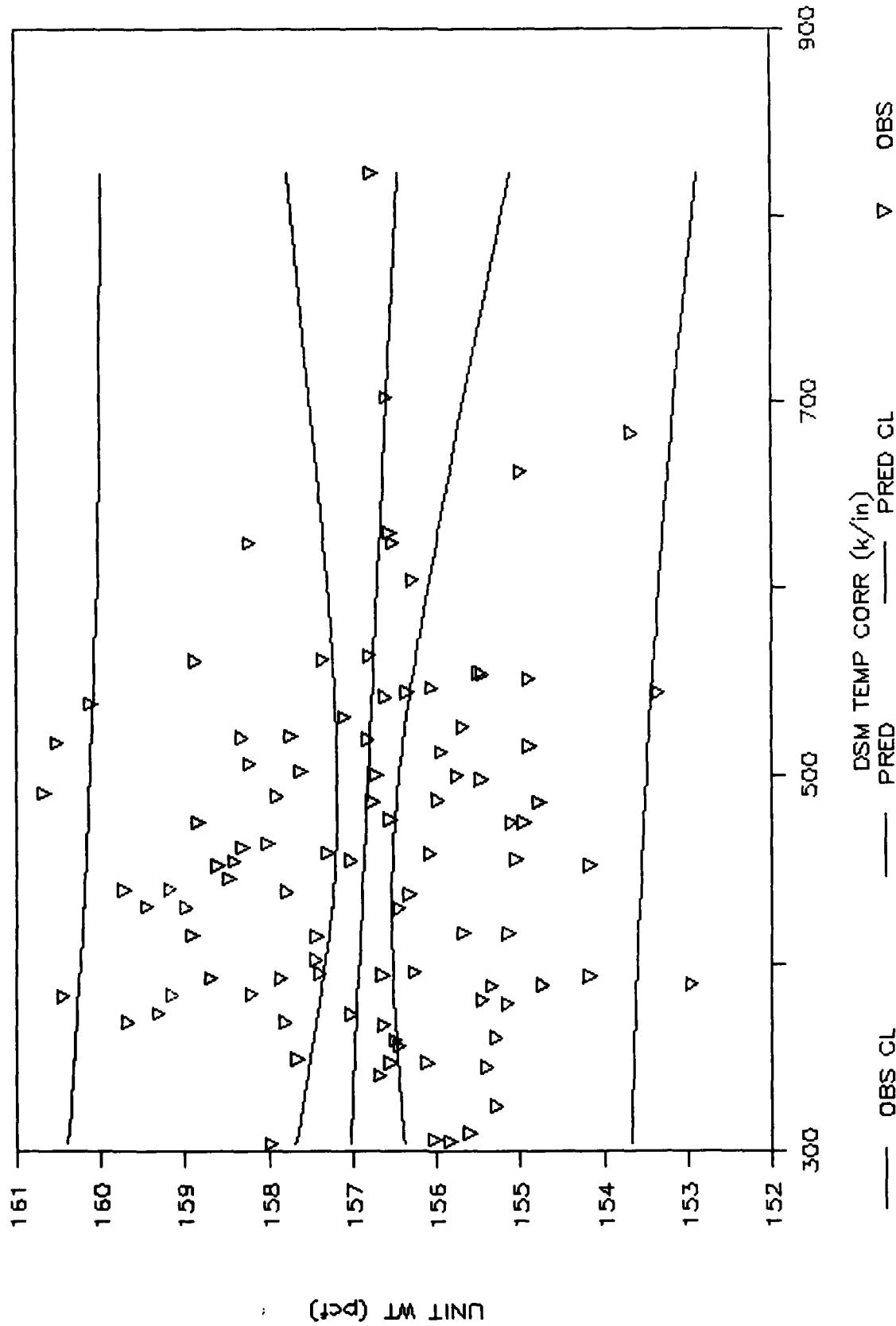


FIGURE 12
UNIT WEIGHT/DSM (TEMP ADJUSTED)
LEESBURG

TABLE D-3
OCEAN CITY DATA BASE
NUCLEAR DENSITIES

OCEAN CITY TERMINAL APRON & CONN TW

DATE	LOT	STA	OFFSET	NDT	DSM	UNIT WT MARSHALL IN PLACE			
		ft	ft	NO.	k/in	**pcf	DENSITY	AIR VOIDS	
<hr/>									
<hr/>									
5-13-87	5	49.50	105 R	1	484	148.5	97.8%	4.9%	
		49.00	105 R	2	581	148.3	97.7%	5.0%	
		48.50	105 R	3	505	147.1	96.9%	5.8%	
		48.00	105 R	4	322	146.7	96.7%	6.0%	
		47.50	105 R	5	428	147.1	97.0%	5.8%	
		47.00	105 R	6	424	146.8	96.8%	6.0%	
		46.50	105 R	7	551	145.8	96.1%	6.6%	
		46.00	105 R	8	642	146.8	96.8%	6.0%	
		45.50	105 R	9	516	145.7	96.0%	6.7%	
		49.25	93 R	10	417	147.2	97.0%	5.7%	
		48.75	93 R	11	538	148.2	97.7%	5.1%	
		48.25	93 R	12	368	143.4	94.5%	8.2%	
		47.75	93 R	13	370	147.6	97.2%	5.5%	
		47.25	93 R	14	346	145.3	95.8%	6.9%	
		46.75	93 R	15	392	148.2	97.7%	5.1%	
		46.25	93 R	16	773	146.6	96.6%	6.1%	
		45.75	93 R	17	787	144.4	95.1%	7.5%	
		45.25	93 R	18	443	145.4	95.8%	6.9%	
		49.50	80 R	19	564	148.6	98.0%	4.8%	
		49.00	80 R	20	270	147.5	97.2%	5.5%	
		48.50	80 R	21	450	143.7	94.7%	8.0%	
		48.00	80 R	22	414	145.2	95.7%	7.0%	
		47.50	80 R	23	495	145.7	96.0%	6.7%	
		47.00	80 R	24	617	146.4	96.5%	6.2%	
		46.50	80 R	25	583	147.1	96.9%	5.8%	
		46.00	80 R	26	1030	142.8	94.1%	8.5%	
		45.50	80 R	27	550	145.4	95.8%	6.9%	
		49.50	65 R	28	443	147.4	97.1%	5.6%	
		48.50	65 R	29	313	146.1	96.3%	6.4%	
		47.50	65 R	30	382	147.3	97.1%	5.6%	
		46.50	65 R	31	615	149.2	98.3%	4.5%	
		45.50	65 R	32	579	146.6	96.6%	6.1%	
		44.50	65 R	33	488	146.3	96.4%	6.3%	
		49.00	52 R	34	1034	147.4	97.1%	5.6%	
		48.00	52 R	35	259	147.3	97.1%	5.6%	
		47.00	52 R	36	297	147.3	97.1%	5.6%	
		46.00	52 R	37	451	146.8	96.7%	6.0%	
		45.00	52 R	38	359	146.3	96.4%	6.3%	
		49.50	39 R	39	789	148.1	97.6%	5.1%	
		48.50	39 R	40	313	144.2	95.1%	7.6%	
		47.50	39 R	41	340	148.5	97.8%	4.9%	
		46.50	39 R	42	555	145.5	95.9%	6.8%	
		45.50	39 R	43	350	146.6	96.6%	6.1%	

Table D-3 (Cont'd.)

OCEAN CITY TERMINAL APRON & CONN TW

DATE	LOT	STA	OFFSET	NDT	DSM	UNIT WT MARSHALL IN PLACE			
		ft	ft	NO.	k/in	** pcf	DENSITY	AIR VOIDS	
<hr/>									
<hr/>									
3411									
<hr/>									
TH UNCORR									
CORE CORR									
		44.50	39 R	44	454	147.8	97.4%	5.3%	
		49.00	26 R	45	813	150.0	98.9%	3.9%	
		48.00	26 R	46	301	145.7	96.0%	6.7%	
		47.00	26 R	47	566	146.7	96.7%	6.0%	
		46.00	26 R	48	725	147.1	96.9%	5.8%	
		45.00	26 R	49	427	148.1	97.6%	5.1%	
		49.50	13 R	50	317	147.8	97.4%	5.3%	
		48.50	13 R	51	308	148.5	97.8%	4.9%	
		47.50	13 R	52	387	148.9	98.1%	4.6%	
		46.50	13 R	53	688	146.8	96.8%	6.0%	
		45.50	13 R	54	607	146.8	96.7%	6.0%	
		44.50	13 R	55	528	145.2	95.7%	7.0%	
		49.00	BL	56	487	147.0	96.9%	5.8%	
		48.00	BL	57	371	147.0	96.9%	5.9%	
		46.00	BL	59	535	147.5	97.2%	5.5%	
		45.00	BL	60	476	148.8	98.1%	4.7%	
		49.50	13 L	61	269	146.4	96.5%	6.2%	
		48.50	13 L	62	374	145.0	95.6%	7.1%	
		47.50	13 L	63	619	146.9	96.8%	5.9%	
5-14-87	6	49.50	103 L	64	402	148.0	97.0%	5.1%	
5-14-87	6	48.50	103 L	65	474	149.8	98.1%	4.0%	
		1.00	5 R	200	415	145.5	95.9%	6.8%	
		2.00	5 R	201	346	147.5	97.2%	5.5%	
		3.00	5 R	202	559	145.4	95.8%	6.9%	
		4.00	5 R	203	376	144.9	95.5%	7.2%	
		4.50	5 L	204	472	147.3	97.1%	5.6%	
		3.50	5 L	205	363	146.5	96.6%	6.1%	
		2.50	5 L	206	339	147.8	97.4%	5.4%	
		1.50	5 L	207	307	146.2	96.3%	6.4%	
		1.50	15 R	208	322	149.0	98.2%	4.5%	
		2.50	15 R	209	648	147.2	97.0%	5.7%	
		3.50	15 R	210	346	146.9	96.8%	5.9%	
		4.50	15 R	211	666	147.7	97.3%	5.4%	
		3.00	15 L	213	483	149.4	98.5%	4.3%	
		2.00	15 L	214	338	148.2	97.6%	5.1%	
		1.00	15 L	215	370	146.4	96.5%	6.2%	
		AVG		480	146.9	96.8%	5.9%		
		STD		160	1.4	0.9%	0.9%		
		COV		33.3%	1.0%	0.9%	15.3%		

Table D-3 (Cont'd.)

OCEAN CITY NEW PARALLEL

DATE	LOT	STA ft	OFFSET ft	NDT NO.	TEMP CORR		UNIT WT MARSHALL IN PLACE		
					DSM k/in	DSM k/in	**pcf	DENSITY	AIR VOIDS
					*****		*****		
5-13-87	5	49.00	5 L	100	484	692	147.1	96.9%	5.8%
		48.50	5 L	101	486	695	146.3	96.4%	6.3%
		48.00	5 L	102	463	663	145.3	95.8%	6.9%
		47.50	5 L	103	415	593	145.9	96.2%	6.5%
		47.00	5 L	104	521	745	147.2	97.0%	5.7%
		46.50	5 L	105	496	709	148.5	97.9%	4.9%
		46.00	5 L	106	446	638	145.8	96.1%	6.6%
		45.50	5 L	107	480	686	145.2	95.7%	7.0%
		49.25	5 R	108	619	885	147.3	97.1%	5.7%
		48.75	5 R	109	658	941	147.2	97.0%	5.7%
		48.25	5 R	110	559	800	149.1	98.3%	4.5%
		47.78	5 R	111	553	791	148.0	97.5%	5.2%
		47.25	5 R	112	540	773	147.1	97.0%	5.8%
		46.75	5 R	113	545	779	147.3	97.1%	5.7%
		46.25	5 R	114	471	673	147.1	96.9%	5.8%
		45.75	5 R	115	554	792	147.8	97.4%	5.4%
		45.25	5 R	116	327	467	146.2	96.3%	6.4%
		49.00	15 R	117	491	703	147.3	97.1%	5.6%
		48.00	15 R	118	502	719	146.5	96.6%	6.2%
		47.00	15 R	119	472	674	146.3	96.4%	6.3%
		46.00	15 R	120	413	590	144.2	95.1%	7.6%
		44.00	15 R	121	250	357	147.6	97.3%	5.4%
		43.00	15 R	122	310	443	146.1	96.3%	6.4%
		42.00	15 R	123	272	389	143.1	94.3%	8.3%
		41.00	15 R	124	294	421	147.1	97.0%	5.8%
		41.50	15 L	125	234	335	147.0	96.9%	5.8%
		42.50	15 L	126	268	383	145.9	96.2%	6.5%
		43.50	15 L	127	345	494	149.8	98.7%	4.1%
		44.50	15 L	128	295	422	147.9	97.5%	5.2%
		45.50	15 L	129	416	595	148.7	98.0%	4.8%
		46.50	15 L	130	375	536	147.0	96.8%	5.9%
		47.50	15 L	131	432	618	147.4	97.1%	5.6%
		48.50	15 L	132	492	703	150.2	99.0%	3.8%
		44.00	5 L	133	348	498	145.4	95.8%	6.9%
		43.00	5 L	134	324	463	145.6	95.9%	6.8%
		42.00	5 L	135	352	503	146.6	96.6%	6.1%
		41.00	5 L	136	339	484	147.7	97.3%	5.4%
		41.50	5 L	137	326	465	148.4	97.8%	5.0%
		42.50	5 L	138	311	445	146.7	96.7%	6.0%

Table D-3 (Cont'd.)

OCEAN CITY NEW PARALLEL

DATE	LOT	STA ft	OFFSET ft	NDT NO.	TEMP CORR		3411		
					DSM	DSM	UNIT WT	MARSHALL	IN PLACE
					k/in	k/in	** pcf	DENSITY	AIR Voids
		43.50	5 L	139	386	552	145.9	96.2%	6.5%
		44.50	5 L	140	331	473	146.9	96.8%	5.9%
				Avg	419	600	146.9	96.8%	5.9%
				STD	106	151	1.3	0.9%	0.9%
				COV	25.2%	25.2%	0.9%	0.9%	14.6%

LINEAR REGRESSION - OCEAN CITY

$$\%MARS = a + b \text{ DSM}$$

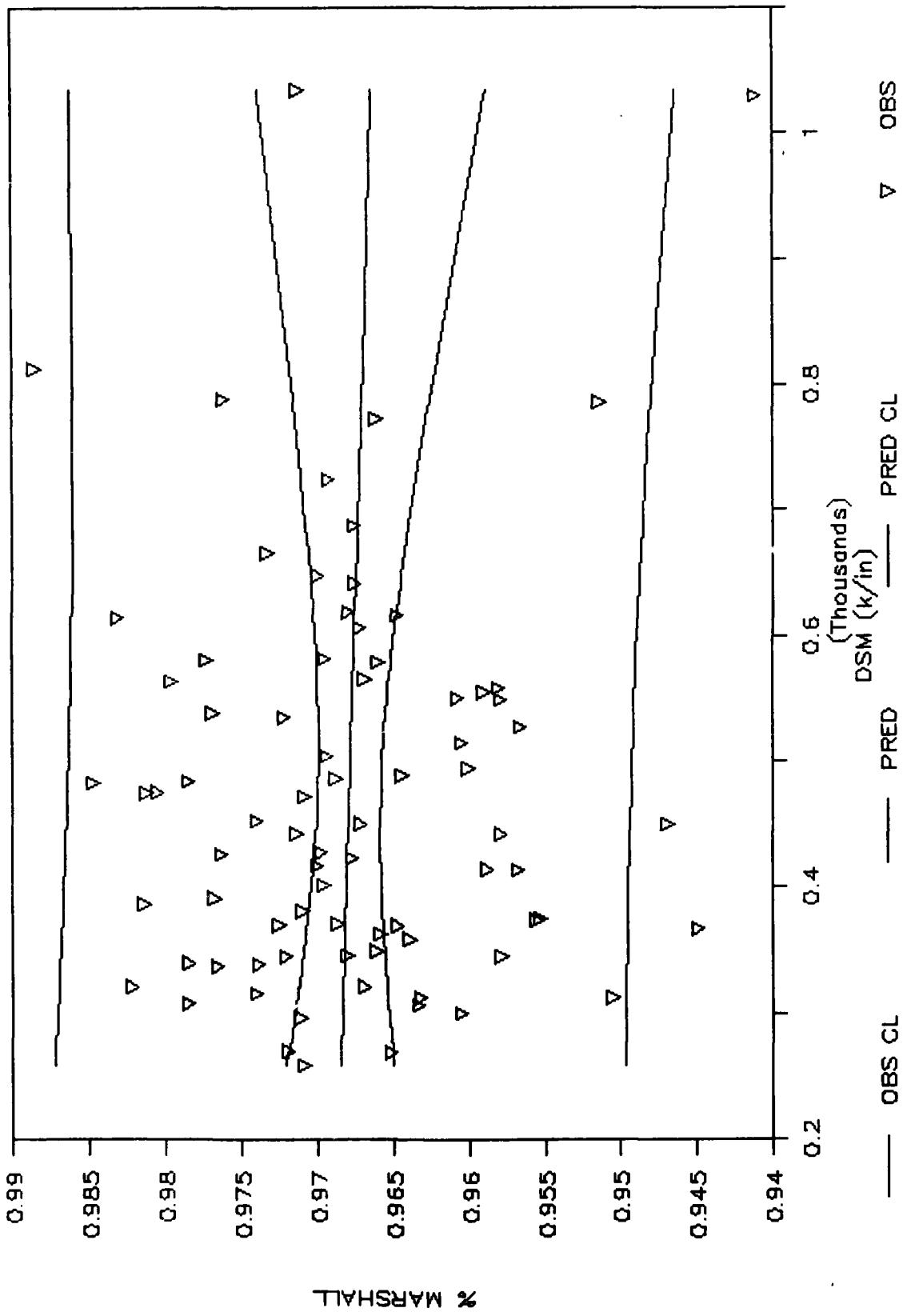


FIGURE 13

MARSHALL DENSITY/DSM (UNADJUSTED)
OCEAN CITY OVERLAY

LINEAR REGRESSION - OCEAN CITY

$$\%AV = a + b \text{ DSM}$$

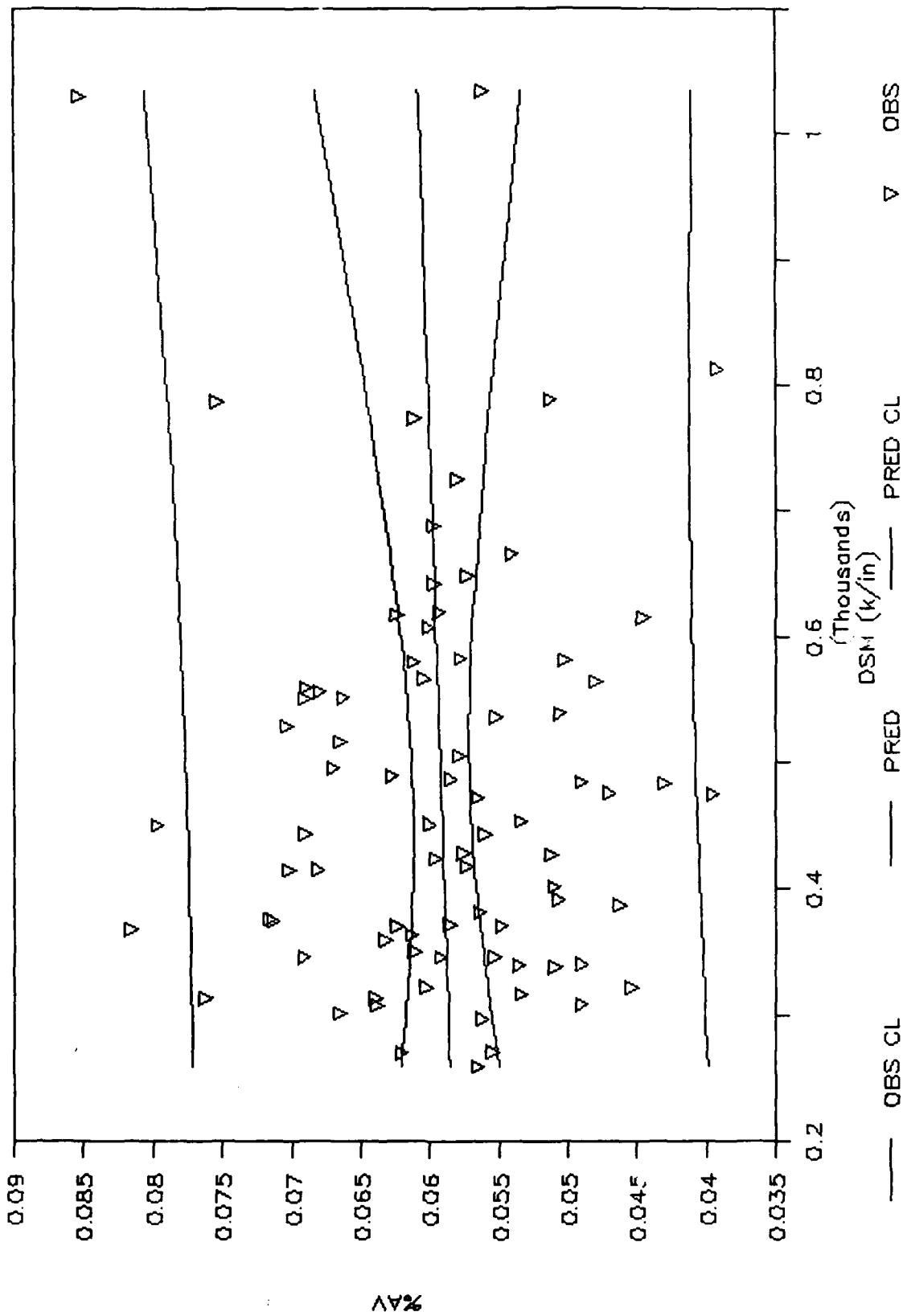


FIGURE 14

IN-PLACE AIR VOIDS/DSM (UNADJUSTED)
OCEAN CITY OVERLAY

LINEAR REGRESSION - OCEAN CITY

$$\text{UNITWT} = a + b \text{ DSM}$$

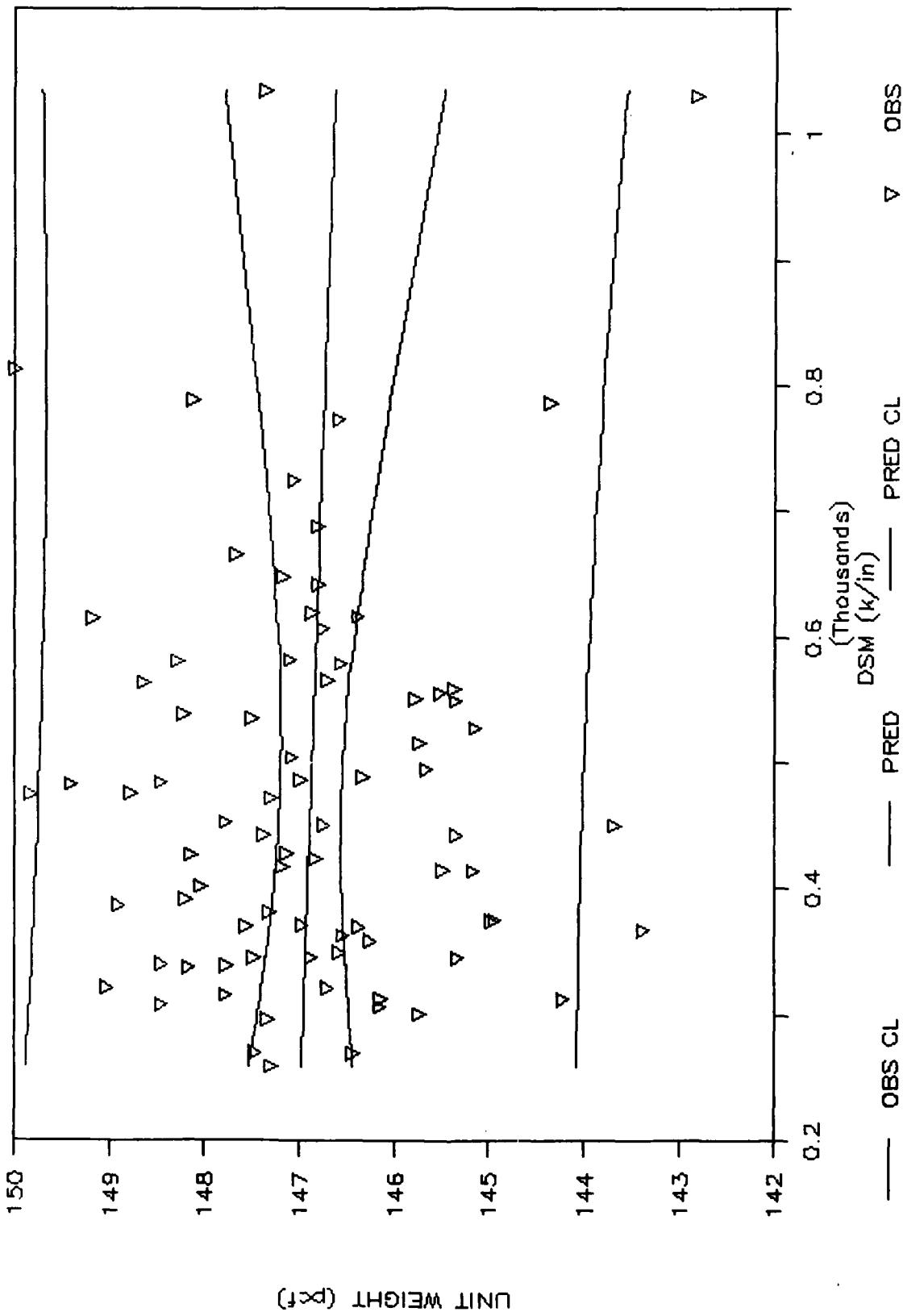


FIGURE 15
UNIT WEIGHT/DSM (UNADJUSTED)
OCEAN CITY OVERLAY

LINEAR REGRESSION - OCEAN CITY NEW TW

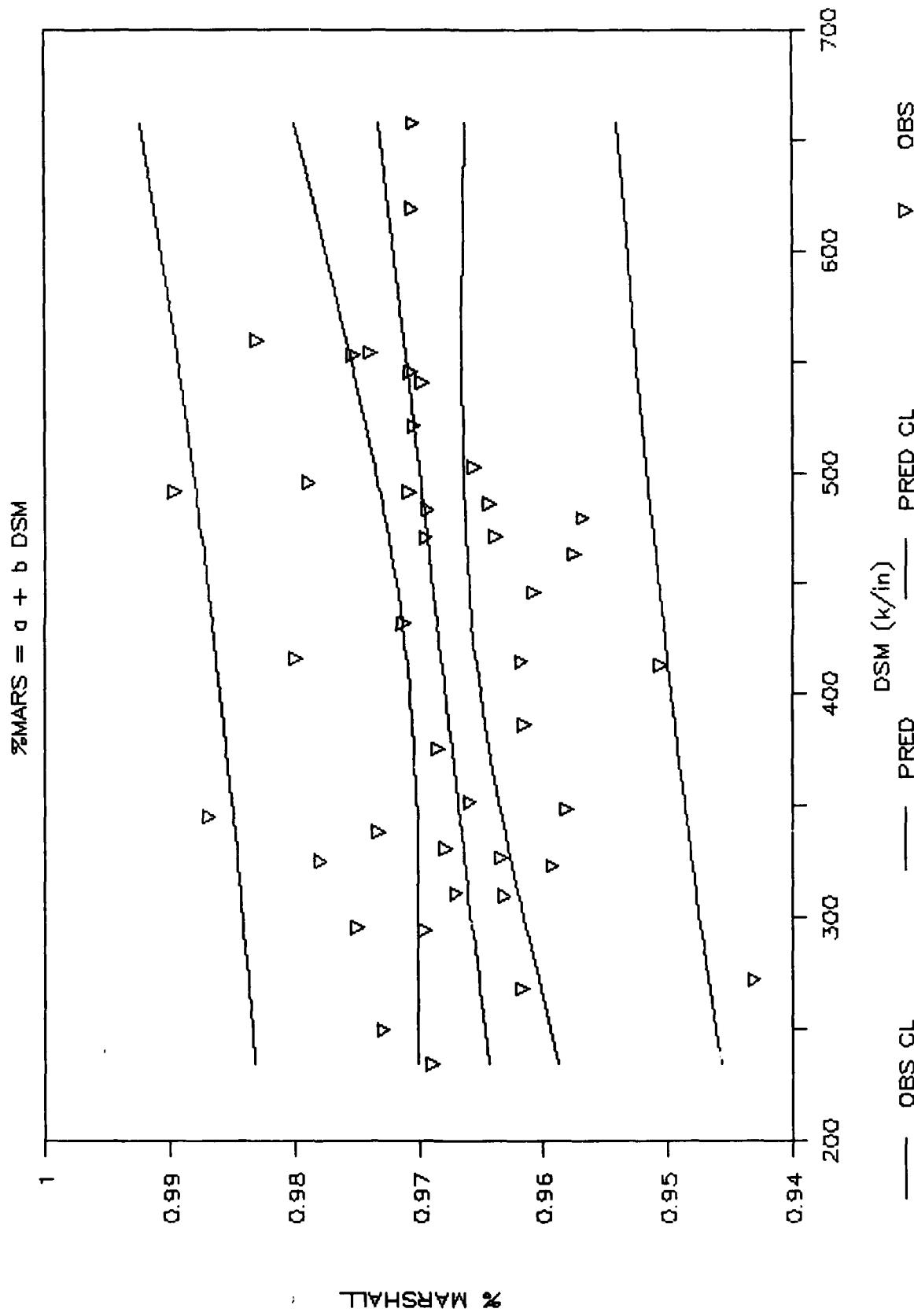


FIGURE 16
MARSHALL DENSITY/DSM (UNADJUSTED)
OCEAN CITY NEW CONSTRUCTION

LINEAR REGRESSION - OCEAN CITY NEW TW

$$\%AV = a + b \text{ DSM}$$

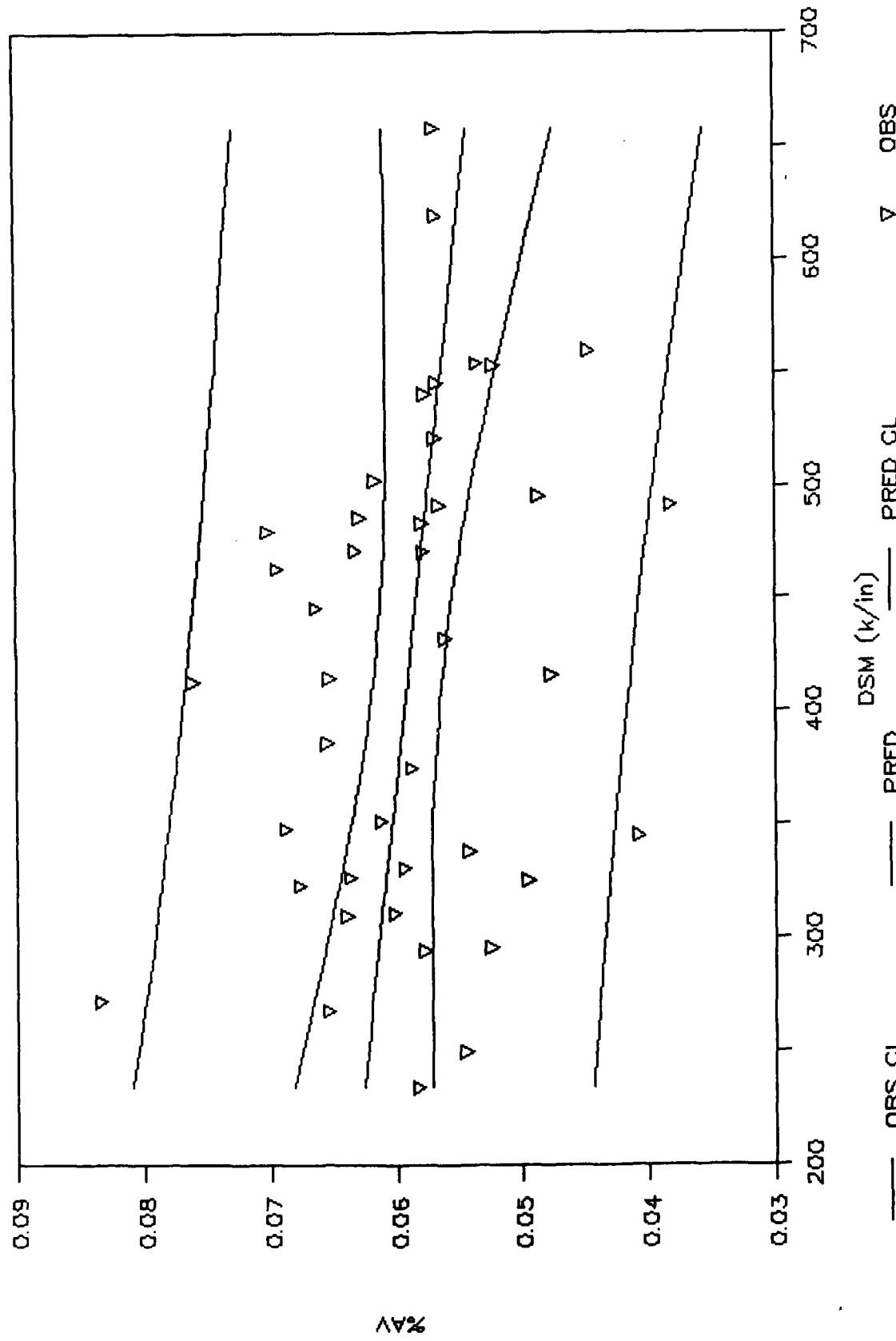


FIGURE 17

IN-PLACE AIR VOIDS/DSM (UNADJUSTED)
OCEAN CITY NEW CONSTRUCTION

LINEAR REGRESSION - OCEAN CITY NEW TW

$$\text{UNITWT} = a + b \text{ DSM}$$

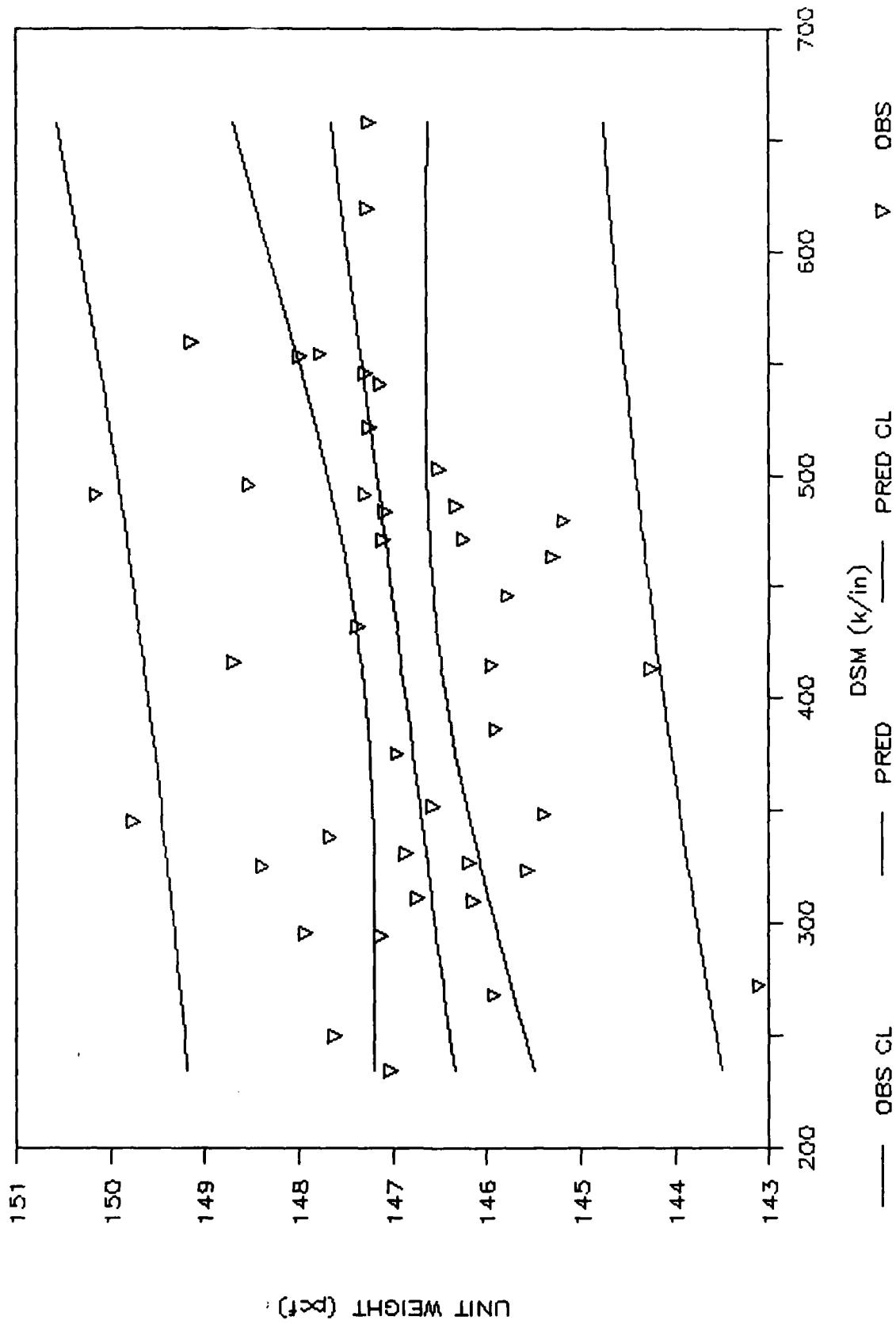


FIGURE 18

UNIT WEIGHT/DSM (UNADJUSTED)
OCEAN CITY NEW CONSTRUCTION

LINEAR REGRESSION - OCEAN CITY NEW TW

$$\text{MARSHALL} = a + b \text{ DSMTC}$$

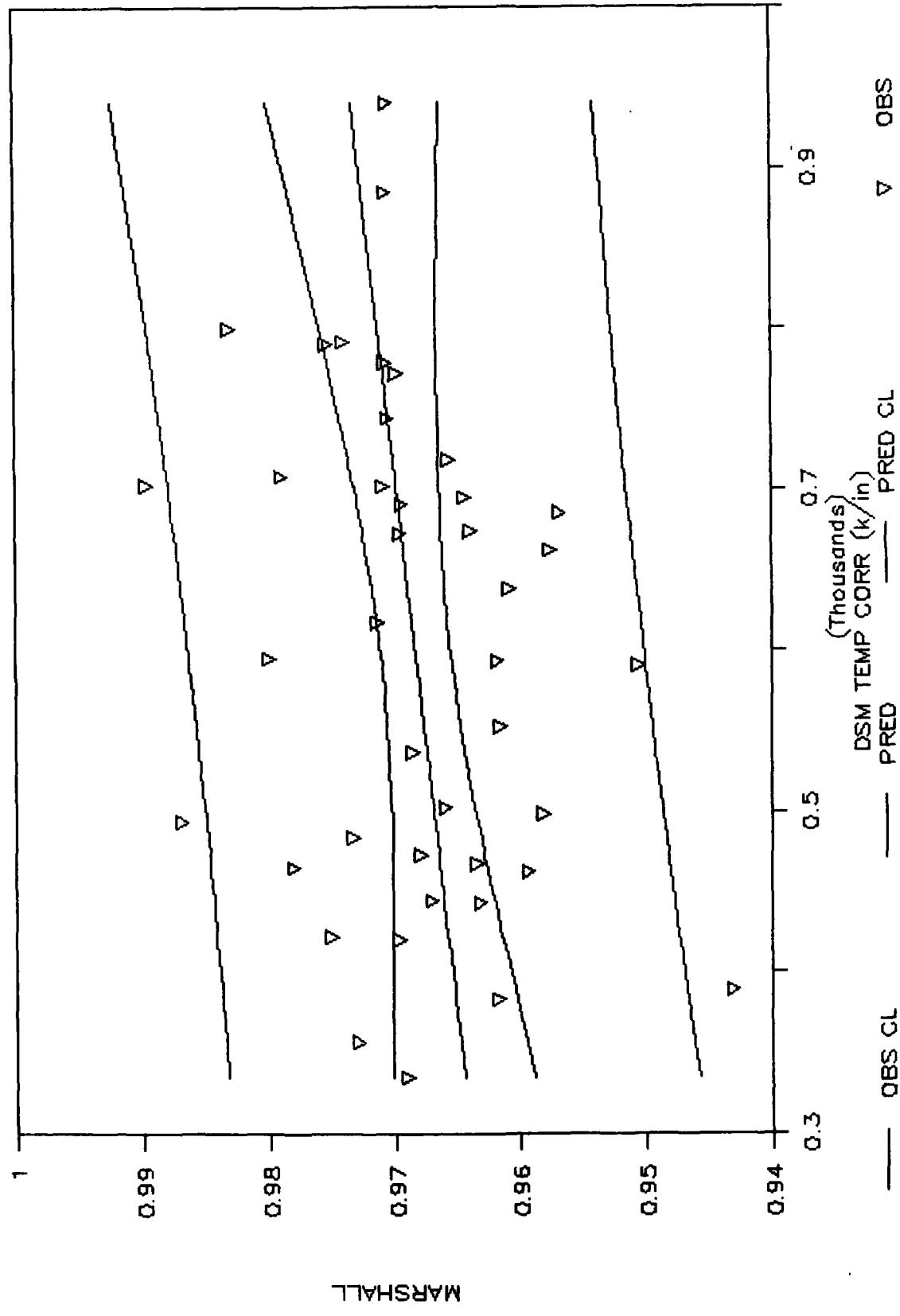


FIGURE 19
MARSHALL DENSITY/DSM (TEMP ADJUSTED)
OCEAN CITY NEW CONSTRUCTION

LINEAR REGRESSION - OCEAN CITY NEW T/W

$$\Delta V = a + b \text{ DSMTC}$$

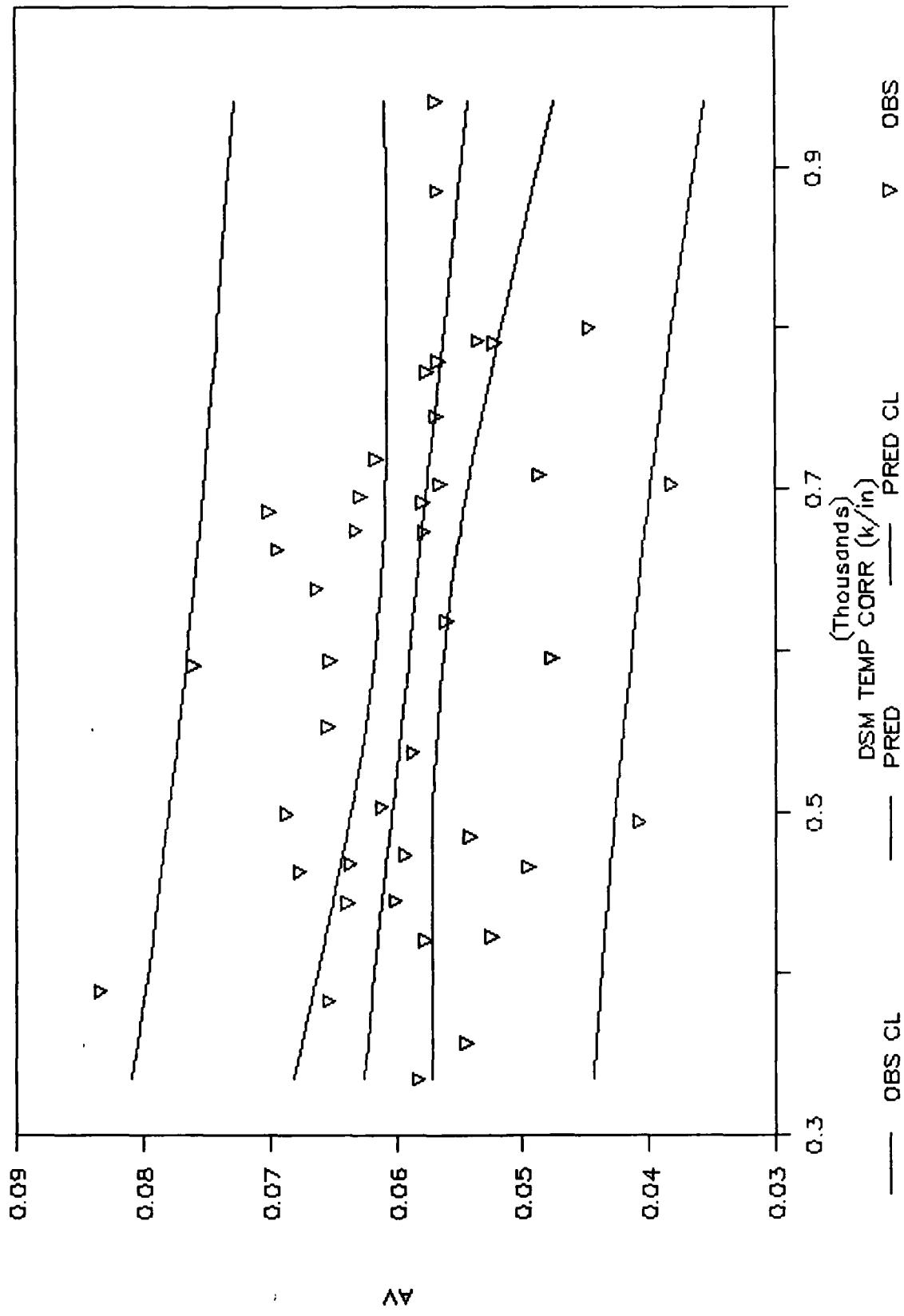


FIGURE 20

IN-PLACE AIR VOIDS/DSM (TEMP ADJUSTED)
OCEAN CITY NEW CONSTRUCTION

LINEAR REGRESSION - OCEAN CITY NEW TW

UNIT WT = $a + b$ DSMTC

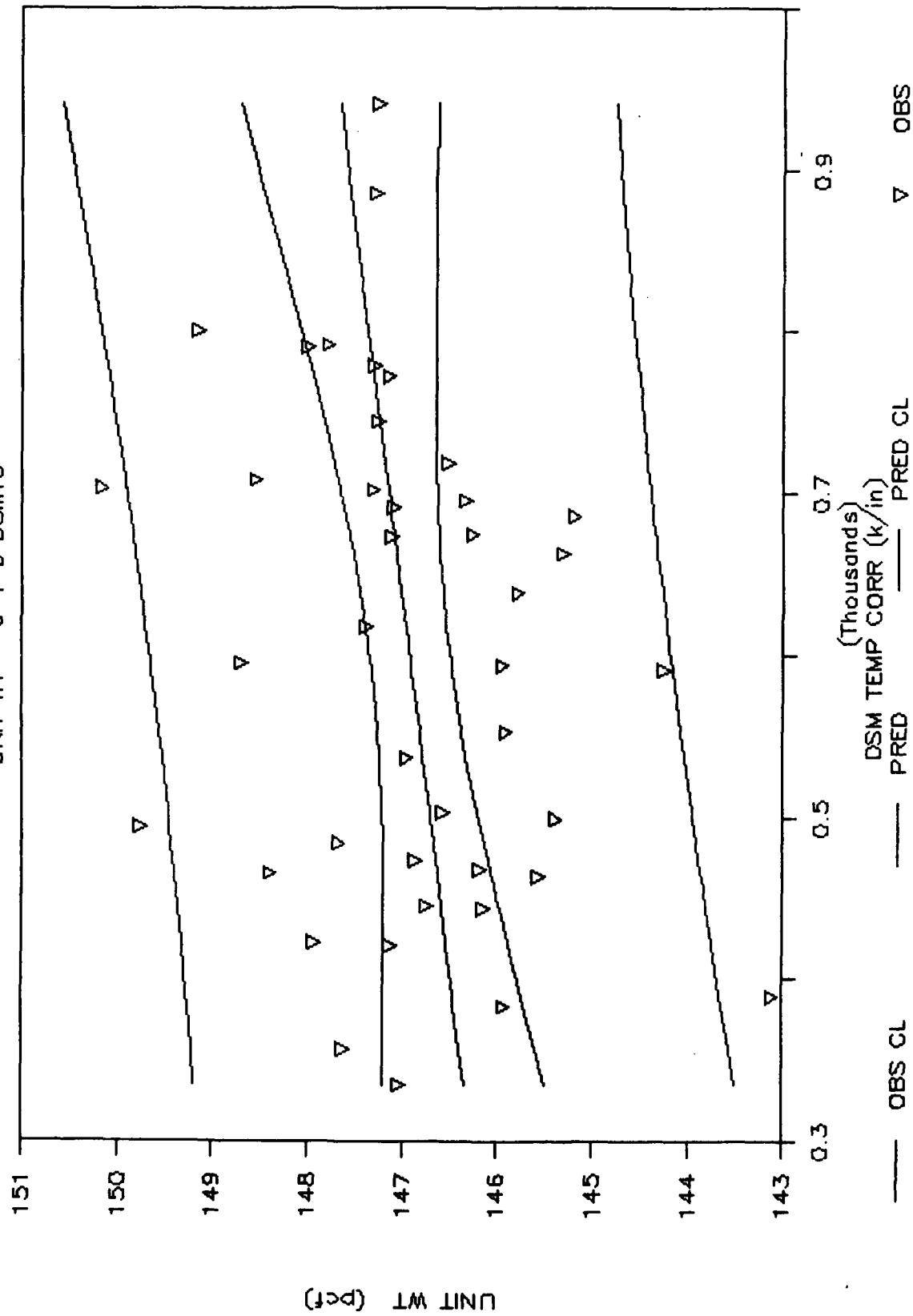


FIGURE 21

UNIT WEIGHT/DSM (TEMP ADJUSTED)
OCEAN CITY NEW CONSTRUCTION

TABLE D-4
COMBINED DATA BASE
NUCLEAR DENSITIES

COMBINED NUCLEAR DATABASE

DATE	LOT	STA ft	OFFSET ft	NDT NO.	TEMP k/in	DSM k/in	NUCLEAR		
							DSM	CORR	UNIT WT pcf
7-13-87	TET 7	31.00	56 R	1	836	986	152.5	96.3%	6.6%
		31.00	6.5 R	37	868	1085	154.3	97.4%	5.5%
		31.00	43 L	73	430	473	152.0	96.0%	6.9%
7-14-87	TET 8	32.00	32 R	19	517	647	148.8	94.8%	8.8%
		32.00	18 L	55	684	794	151.4	96.5%	7.2%
		32.00	68 L	91	921	1023	150.3	95.8%	7.9%
		33.00	56 R	2	429	507	148.6	94.7%	8.9%
		33.00	6.5 R	38	761	951	152.3	97.0%	6.6%
		33.00	43 L	74	488	537	148.9	94.9%	8.7%
		34.00	32 R	20	587	734	145.1	92.5%	11.0%
		34.00	18 L	56	466	541	151.2	96.3%	7.3%
		34.00	68 L	92	1273	1413	148.9	94.9%	8.7%
		35.00	56 R	3	846	999	148.3	94.5%	9.1%
		35.00	6.5 R	39	732	914	150.8	96.1%	7.5%
		35.00	43 L	75	689	758	150.3	95.8%	7.9%
		36.00	32 R	21	722	902	148.9	94.9%	8.7%
		36.00	18 L	57	651	755	153.4	97.7%	6.0%
		36.00	68 L	93	1064	1181	150.6	96.0%	7.7%
7-15-87	TET 9	37.15	56 R	4	966	1139	150.9	95.6%	7.5%
		37.15	6.5 R	40	952	1190	155.6	98.6%	4.6%
		37.15	43 L	76	530	583	149.2	94.6%	8.5%
		38.00	32 R	22	701	876	151.6	96.1%	7.0%
		38.00	18 L	58	781	906	150.2	95.2%	7.9%
		38.00	68 L	94	1129	1253	151.4	96.0%	7.1%
		39.00	56 R	5	891	1051	151.4	96.0%	7.1%
		39.00	6.5 R	41	826	1032	153.5	97.3%	5.9%
		39.00	43 L	77	643	708	153.3	97.2%	6.0%
		40.00	32 R	23	562	702	151.4	96.0%	7.1%
		40.00	18 L	59	755	876	154.2	97.7%	5.4%
		40.00	68 L	95	974	1081	149.5	94.8%	8.3%
		41.00	56 R	6	1395	1646	152.8	96.8%	6.3%
		41.00	6.5 R	42	886	1107	154.7	98.1%	5.1%
		41.00	43 L	78	781	859	149.8	94.9%	8.1%
		42.00	32 R	24	865	1082	152.8	96.8%	6.3%
		42.00	18 L	60	929	1013	156.3	99.1%	4.1%
7-16-87	TET 10	42.00	68 L	96	883	980	150.1	95.1%	7.9%
		43.00	56 R	7	1224	1444	150.0	95.1%	8.4%
		43.00	6.5 R	43	974	1217	153.0	97.0%	6.5%
		43.00	43 L	79	716	787	152.7	96.8%	6.7%
		44.00	32 R	25	629	786	151.6	96.1%	7.4%
		44.00	18 L	61	898	979	150.3	95.2%	8.2%
		44.00	68 L	97	723	803	151.4	95.9%	7.5%

Table D-4 (Cont'd.)

COMBINED NUCLEAR DATABASE

DATE	LOT	STA	OFFSET	NDT	TEMP CORR		NUCLEAR		
					DSM	DSM	UNIT WT	MARSHALL IN PLACE	
					k/in	k/in	pcf	DENSITY	AIR VOIDS
<hr/>									
7-20-87	TET 12	45.00	56 R	8	521	615	150.3	95.2%	8.2%
		45.00	6.5 R	44	897	1121	148.7	94.2%	9.1%
		45.00	43 L	80	627	690	149.9	95.0%	8.4%
		46.00	32 R	26	401	501	150.2	95.2%	8.2%
		46.00	18 L	62	640	698	152.6	96.7%	6.8%
		46.00	68 L	98	927	1029	149.7	94.9%	8.5%
		47.00	56 R	9	1058	1248	150.6	95.4%	8.0%
		47.00	6.5 R	45	594	743	151.7	96.1%	7.3%
		47.00	43 L	81	444	489	151.6	96.1%	7.4%
		48.00	32 R	27	816	1127	150.0	95.1%	8.4%
		48.00	18 L	63	926	1028	152.1	96.4%	7.1%
		48.00	68 L	99	877	973	151.7	96.1%	7.3%
		49.00	56 R	10	858	1072	152.4	96.6%	6.9%
		49.00	6.5 R	46	936	1283	153.1	97.0%	6.5%
		49.00	43 L	82	577	647	153.6	97.3%	6.2%
		50.00	32 R	28	858	1218	154.3	97.8%	5.7%
		50.00	18 L	64	848	941	153.7	97.4%	6.1%
		50.00	68 L	100	714	814	153.5	97.3%	6.2%
7-21-87	TET 13	51.00	56 R	11	621	789	153.5	96.8%	5.9%
		51.00	6.5 R	47	1238	1745	153.3	96.7%	6.1%
		51.00	43 L	83	976	1103	152.3	96.1%	6.7%
		52.00	32 R	29	865	1229	154.7	97.6%	5.2%
		52.00	18 L	65	956	1071	153.3	96.7%	6.1%
		52.00	68 L	101	860	980	152.6	96.3%	6.5%
		53.00	56 R	12	978	1242	153.3	96.7%	6.1%
		53.00	6.5 R	48	1193	1682	151.9	95.8%	6.9%
		53.00	43 L	84	883	998	153.3	96.7%	6.1%
		54.00	32 R	30	907	1287	154.4	97.4%	5.4%
		54.00	18 L	66	1057	1184	151.3	95.4%	7.3%
		54.00	68 L	102	1026	1170	151.0	95.3%	7.5%
		55.00	56 R	13	1408	1788	153.4	96.8%	6.0%
		55.00	6.5 R	49	1941	2737	154.9	97.7%	5.1%
		55.00	43 L	85	1663	1879	155.4	98.0%	4.8%
		56.00	32 R	31	1137	1615	153.6	97.4%	5.5%
		56.00	18 L	67	1309	1467	153.5	97.4%	5.6%
		56.00	68 L	103	1291	1472	154.9	98.3%	4.7%
		57.00	56 R	14	1110	1409	153.0	97.1%	5.9%
		57.00	6.5 R	50	1083	1527	154.6	98.1%	4.9%
		57.00	43 L	86	1130	1277	152.7	96.9%	6.1%
		58.00	32 R	32	998	1417	153.9	97.6%	5.4%
		58.00	18 L	68	1183	1325	154.2	97.8%	5.2%
		58.00	68 L	104	1327	1512	154.7	98.1%	4.9%

Table D-4 (Cont'd.)

COMBINED NUCLEAR DATABASE

DATE	LOT	STA ft	OFFSET ft	NDT NO.	TEMP DSM k/in	CORR DSM k/in	NUCLEAR		
							UNIT WT	MARSHALL IN PLACE	
							pcf	DENSITY	AIR Voids
59.00	56 R	15			802	1018	150.6	95.5%	7.4%
59.00	6.5 R	51			969	1366	151.1	95.9%	7.1%
59.00	43 L	87			961	1086	151.6	96.2%	6.8%
60.00	32 R	33			675	958	152.9	97.0%	6.0%
60.00	18 L	69			637	713	152.2	96.6%	6.4%
60.00	68 L	105			830	946	151.8	96.3%	6.7%
61.00	56 R	16			612	777	150.8	95.7%	7.3%
61.00	6.5 R	52			868	1259	151.3	96.0%	7.0%
61.00	43 L	88			622	709	153.4	97.3%	5.7%
62.00	32 R	34			658	934	152.1	96.5%	6.5%
62.00	18 L	70			705	790	155.4	98.6%	4.4%
62.00	68 L	106			599	683	154.0	97.7%	5.3%
7-22-87	TET 14	63.00	56 R	17	663	842	152.8	97.4%	5.6%
		63.00	6.5 R	53	757	1097	155.1	98.8%	4.1%
		63.00	43 L	89	772	880	153.4	97.7%	5.2%
		64.00	32 R	35	706	1003	152.4	97.1%	5.8%
		64.00	18 L	71	787	881	152.3	97.0%	5.9%
		65.00	56 R	18	788	1000	153.1	97.5%	5.4%
		65.00	6.5 R	54	727	1055	153.2	97.6%	5.3%
		65.00	43 L	90	772	880	152.6	97.2%	5.7%
8-4-87	LSB 1	0.50	15L	1	350	445	158.5	97.5%	5.1%
		2.50	15L	2	374	475	158.8	97.7%	4.9%
		4.50	15L	3	648	823	156.8	96.5%	6.1%
		6.50	15L	4	273	347	156.1	96.1%	6.5%
		8.50	15L	5	410	521	157.7	97.0%	5.6%
		10.50	15L	6	356	452	154.2	94.9%	7.7%
		12.50	15L	7	399	506	158.2	97.4%	5.3%
		14.50	15L	8	443	562	157.3	96.8%	5.8%
		16.50	15L	9	553	702	156.6	96.3%	6.3%
		18.50	15L	10	290	368	159.7	98.3%	4.4%
		20.50	15L	11	302	384	158.2	97.3%	5.3%
		22.50	15L	12	470	554	155.5	95.6%	6.9%
		24.50	15L	13	302	356	156.4	96.3%	6.3%
		26.50	15L	14	263	310	155.6	95.7%	6.8%
		28.50	15L	15	579	683	153.7	94.6%	8.0%
		30.50	15L	16	329	389	153.0	94.1%	8.4%
		1.00	5L	19	365	464	158.0	97.2%	5.4%
		2.05	5L	20	429	544	153.3	94.4%	8.2%
		3.00	5L	21	414	526	155.7	95.8%	6.8%
		4.10	5L	22	344	436	156.3	96.2%	6.4%
		5.00	5L	23	383	486	156.8	96.5%	6.1%
		6.00	5L	24	394	500	156.7	96.4%	6.2%

Table D-4 (Cont'd.)

COMBINED NUCLEAR DATABASE

DATE	LOT	STA ft	OFFSET ft	NDT NO.	TEMP CORR		NUCLEAR		
					DSM k/in	DSM k/in	UNIT WT pcf	MARSHALL DENSITY	IN PLACE AIR Voids
		7.00	5L	25	356	452	158.6	97.6%	5.0%
		8.00	5L	26	273	347	156.5	96.3%	6.3%
		9.00	5L	27	374	475	155.1	95.4%	7.1%
		10.00	5L	28	311	395	156.3	96.2%	6.4%
		11.00	5L	29	430	546	156.0	96.0%	6.6%
		12.00	5L	30	385	489	157.9	97.2%	5.5%
		13.00	5L	31	339	430	159.5	98.1%	4.5%
		14.00	5L	32	283	359	156.5	96.3%	6.3%
		15.00	5L	33	326	414	157.4	96.9%	5.7%
		16.00	5L	34	496	629	156.5	96.3%	6.3%
		17.00	5L	35	437	554	155.5	95.7%	6.9%
		19.00	5L	37	364	462	158.3	97.4%	5.2%
		20.00	5L	38	375	476	156.5	96.3%	6.3%
		21.00	5L	39	393	500	155.7	95.8%	6.8%
		22.25	5L	40	508	604	156.3	96.2%	6.4%
		23.00	5L	41	474	564	156.8	96.5%	6.1%
		24.00	5L	42	338	402	157.4	96.9%	5.7%
		25.00	5L	43	385	458	156.1	96.0%	6.6%
		26.00	5L	44	313	373	157.0	96.6%	6.0%
		27.00	5L	45	308	367	156.6	96.4%	6.2%
		28.00	5L	46	430	512	155.9	95.9%	6.6%
		29.00	5L	47	409	487	156.0	96.0%	6.6%
		30.00	5L	48	326	388	155.3	95.6%	7.0%
		31.00	5L	49	349	416	155.1	95.5%	7.1%
		32.00	5L	50	418	497	155.5	95.7%	6.9%
		0.50	15R	53	380	475	155.0	95.3%	7.2%
		1.50	5R	54	351	438	157.8	97.1%	5.5%
		2.50	5R	55	414	518	160.5	98.8%	3.9%
		3.50	5R	56	416	520	158.3	97.4%	5.2%
		4.50	5R	57	315	394	156.6	96.4%	6.2%
		5.50	5R	58	393	491	160.7	98.9%	3.8%
		6.50	5R	59	306	382	160.4	98.7%	3.9%
		7.50	5R	60	316	395	157.4	96.8%	5.8%
		8.50	5R	61	245	306	156.0	96.0%	6.6%
		9.50	5R	62	295	369	157.8	97.1%	5.5%
		10.50	5R	63	314	392	158.7	97.6%	5.0%
		11.50	5R	64	415	519	156.8	96.5%	6.1%
		12.50	5R	65	425	531	157.1	96.7%	5.9%
		13.50	5R	66	313	392	157.9	97.1%	5.5%
		14.50	5R	67	299	374	159.3	98.0%	4.6%
		15.50	5R	68	363	454	158.4	97.5%	5.2%
		16.50	5R	69	367	458	157.3	96.8%	5.8%

Table D-4 (Cont'd.)

COMBINED NUCLEAR DATABASE

DATE	LOT	STA	OFFSET	NDT	TEMP	CORR	NUCLEAR			
							DSM	DSM	UNIT WT	MARSHALL IN PLACE
							k/in	k/in	pcf	DENSITY AIR Voids
		17.50	5R	70	499	624	158.2	97.4%	5.3%	
		18.50	5R	71	351	439	159.7	98.3%	4.4%	
		19.50	5R	72	244	305	155.8	95.9%	6.7%	
		20.50	5R	73	279	349	157.7	97.0%	5.6%	
		21.50	5R	74	344	430	159.0	97.8%	4.8%	
		22.50	5R	75	480	562	158.9	97.8%	4.9%	
		23.50	5R	76	389	455	157.0	96.6%	6.0%	
		24.50	5R	77	376	440	159.2	97.9%	4.7%	
		25.50	5R	78	328	383	159.2	97.9%	4.7%	
		26.50	5R	79	332	388	154.7	95.2%	7.4%	
		27.50	5R	80	389	455	155.1	95.4%	7.2%	
		28.50	5R	81	566	662	155.0	95.4%	7.2%	
		29.50	5R	82	440	515	154.9	95.3%	7.3%	
		30.50	5R	83	429	502	157.6	97.0%	5.6%	
		31.50	5R	84	534	624	156.5	96.3%	6.3%	
		1.50	15R	88	441	542	156.6	96.4%	6.2%	
		3.50	15R	89	308	378	155.2	95.5%	7.1%	
		5.50	15R	90	337	415	158.9	97.8%	4.9%	
		7.50	15R	91	247	304	158.0	97.2%	5.4%	
		9.50	15R	92	338	416	155.7	95.8%	6.8%	
		11.50	15R	93	442	544	156.3	96.2%	6.4%	
		13.50	15R	94	309	380	155.5	95.6%	6.9%	
		15.50	15R	95	448	552	154.9	95.3%	7.3%	
		17.50	15R	96	438	538	160.1	98.5%	4.1%	
		19.50	15R	97	277	340	156.7	96.4%	6.2%	
		21.50	15R	98	319	393	154.2	94.9%	7.7%	
		23.50	15L	99	367	429	156.4	96.3%	6.3%	
		25.50	15L	100	308	360	155.3	95.5%	7.0%	
		27.50	15L	101	277	324	155.3	95.5%	7.0%	
		29.50	15L	102	415	485	154.8	95.2%	7.3%	
		31.50	15L	103	295	345	155.4	95.6%	7.0%	
5-13-87	OCN 5	49.50	105 R	1	484		148.5	97.8%	4.9%	
		49.00	105 R	2	581		148.3	97.7%	5.0%	
		48.50	105 R	3	505		147.1	96.9%	5.8%	
		48.00	105 R	4	322		146.7	96.7%	6.0%	
		47.50	105 R	5	428		147.1	97.0%	5.8%	
		47.00	105 R	6	424		146.8	96.8%	6.0%	
		46.50	105 R	7	551		145.8	96.1%	6.6%	
		46.00	105 R	8	642		146.8	96.8%	6.0%	
		45.50	105 R	9	516		145.7	96.0%	6.7%	
		49.25	93 R	10	417		147.2	97.0%	5.7%	
		48.75	93 R	11	538		148.2	97.7%	5.1%	

Table D-4 (Cont'd.)

COMBINED NUCLEAR DATABASE

DATE	LOT	STA ft	OFFSET ft	NDT NO.	TEMP CORR	NUCLEAR		
						DSM k/in	DSM k/in	UNIT WT pcf
								MARSHALL DENSITY
								IN PLACE AIR Voids
48.25		93 R	12		368			94.5% 8.2%
47.75		93 R	13		370			97.2% 5.5%
47.25		93 R	14		346			95.8% 6.9%
46.75		93 R	15		392			97.7% 5.1%
46.25		93 R	16		773			96.6% 6.1%
45.75		93 R	17		787			95.1% 7.5%
45.25		93 R	18		443			95.8% 6.9%
49.50		80 R	19		564			98.0% 4.8%
49.00		80 R	20		270			97.2% 5.5%
48.50		80 R	21		450			94.7% 8.0%
48.00		80 R	22		414			95.7% 7.0%
47.50		80 R	23		495			96.0% 6.7%
47.00		80 R	24		617			96.5% 6.2%
46.50		80 R	25		583			96.9% 5.8%
46.00		80 R	26		1030			94.1% 8.5%
45.50		80 R	27		550			95.8% 6.9%
49.50		65 R	28		443			97.1% 5.6%
48.50		65 R	29		313			96.3% 6.4%
47.50		65 R	30		382			97.1% 5.6%
46.50		65 R	31		615			98.3% 4.5%
45.50		65 R	32		579			96.6% 6.1%
44.50		65 R	33		488			96.4% 6.3%
49.00		52 R	34		1034			97.1% 5.6%
48.00		52 R	35		259			97.1% 5.6%
47.00		52 R	36		297			97.1% 5.6%
46.00		52 R	37		451			96.7% 6.0%
45.00		52 R	38		359			96.4% 6.3%
49.50		39 R	39		789			97.6% 5.1%
48.50		39 R	40		313			95.1% 7.6%
47.50		39 R	41		340			97.8% 4.9%
46.50		39 R	42		555			95.9% 6.8%
45.50		39 R	43		350			96.6% 6.1%
44.50		39 R	44		454			97.4% 5.3%
49.00		26 R	45		813			98.9% 3.9%
48.00		26 R	46		301			96.0% 6.7%
47.00		26 R	47		566			96.7% 6.0%
46.00		26 R	48		725			96.9% 5.8%
45.00		26 R	49		427			97.6% 5.1%
49.50		13 R	50		317			97.4% 5.3%
48.50		13 R	51		308			97.8% 4.9%
47.50		13 R	52		387			98.1% 4.6%
46.50		13 R	53		688			96.8% 6.0%

Table D-4 (Cont'd.)

COMBINED NUCLEAR DATABASE

DATE	LOT	STA ft	OFFSET ft	NDT NO.	TEMP CORR	NUCLEAR		
						DSM k/in	DSM k/in	UNIT WT MARSHALL IN PLACE pcf DENSITY AIR Voids
						*****	*****	*****
5-14-87	OCN 6	45.50	13 R	54	607	146.8	96.7%	6.0%
		44.50	13 R	55	528	145.2	95.7%	7.0%
		49.00	BL	56	487	147.0	96.9%	5.8%
		48.00	BL	57	371	147.0	96.9%	5.9%
		46.00	BL	59	535	147.5	97.2%	5.5%
		45.00	BL	60	476	148.8	98.1%	4.7%
		49.50	13 L	61	269	146.4	96.5%	6.2%
		48.50	13 L	62	374	145.0	95.6%	7.1%
		47.50	13 L	63	619	146.9	96.8%	5.9%
		49.50	103 L	64	402	148.0	97.0%	5.1%
		48.50	103 L	65	474	149.8	98.1%	4.0%
		1.00	5 R	200	415	145.5	95.9%	6.8%
		2.00	5 R	201	346	147.5	97.2%	5.5%
		3.00	5 R	202	559	145.4	95.8%	6.9%
		4.00	5 R	203	376	144.9	95.5%	7.2%
		4.50	5 L	204	472	147.3	97.1%	5.6%
		3.50	5 L	205	363	146.5	96.6%	6.1%
		2.50	5 L	206	339	147.8	97.4%	5.4%
		1.50	5 L	207	307	146.2	96.3%	6.4%
		1.50	15 R	208	322	149.0	98.2%	4.5%
		2.50	15 R	209	648	147.2	97.0%	5.7%
		3.50	15 R	210	346	146.9	96.8%	5.9%
		4.50	15 R	211	666	147.7	97.3%	5.4%
		3.00	15 L	213	483	149.4	98.5%	4.3%
		2.00	15 L	214	338	148.2	97.6%	5.1%
		1.00	15 L	215	370	146.4	96.5%	6.2%
		49.00	5 L	100	484	692	147.1	96.9%
		48.50	5 L	101	486	695	146.3	96.4%
		48.00	5 L	102	463	663	145.3	95.8%
		47.50	5 L	103	415	593	145.9	96.2%
		47.00	5 L	104	521	745	147.2	97.0%
		46.50	5 L	105	496	709	148.5	97.9%
		46.00	5 L	106	446	638	145.8	96.1%
		45.50	5 L	107	480	686	145.2	95.7%
		49.25	5 R	108	619	885	147.3	97.1%
		48.75	5 R	109	658	941	147.2	97.0%
		48.25	5 R	110	559	800	149.1	98.3%
		47.78	5 R	111	553	791	148.0	97.5%
		47.25	5 R	112	540	773	147.1	97.0%
		46.75	5 R	113	545	779	147.3	97.1%
		46.25	5 R	114	471	673	147.1	96.9%
		45.75	5 R	115	554	792	147.8	97.4%

Table D-4 (Cont'd.)

COMBINED NUCLEAR DATABASE

DATE	LOT	STA ft	OFFSET ft	NDT NO.	TEMP CORR		NUCLEAR		
					DSM k/in	DSM k/in	UNIT WT pcf	MARSHALL IN PLACE DENSITY	AIR VOIDS
45.25		5 R	116	327	467		146.2	96.3%	6.4%
49.00		15 R	117	491	703		147.3	97.1%	5.6%
48.00		15 R	118	502	719		146.5	96.6%	6.2%
47.00		15 R	119	472	674		146.3	96.4%	6.3%
46.00		15 R	120	413	590		144.2	95.1%	7.6%
44.00		15 R	121	250	357		147.6	97.3%	5.4%
43.00		15 R	122	310	443		146.1	96.3%	6.4%
42.00		15 R	123	272	389		143.1	94.3%	8.3%
41.00		15 R	124	294	421		147.1	97.0%	5.8%
41.50		15 L	125	234	335		147.0	96.9%	5.8%
42.50		15 L	126	268	383		145.9	96.2%	6.5%
43.50		15 L	127	345	494		149.8	98.7%	4.1%
44.50		15 L	128	295	422		147.9	97.5%	5.2%
45.50		15 L	129	416	595		148.7	98.0%	4.8%
46.50		15 L	130	375	536		147.0	96.8%	5.9%
47.50		15 L	131	432	618		147.4	97.1%	5.6%
48.50		15 L	132	492	703		150.2	99.0%	3.8%
44.00		5 L	133	348	498		145.4	95.8%	6.9%
43.00		5 L	134	324	463		145.6	95.9%	6.8%
42.00		5 L	135	352	503		146.6	96.6%	6.1%
41.00		5 L	136	339	484		147.7	97.3%	5.4%
41.50		5 L	137	326	465		148.4	97.8%	5.0%
42.50		5 L	138	311	445		146.7	96.7%	6.0%
43.50		5 L	139	386	552		145.9	96.2%	6.5%
44.50		5 L	140	331	473		146.9	96.8%	5.9%
				AVG	564	736	151.6	96.6%	6.2%
				STD	273	364	4.4	1.0%	1.1%
				COV	48.5%	49.5%	2.9%	1.1%	17.9%

LINEAR REGRESSION - COMBINED NUCLEAR

$$\%MARS = a + b \text{ DSM}$$

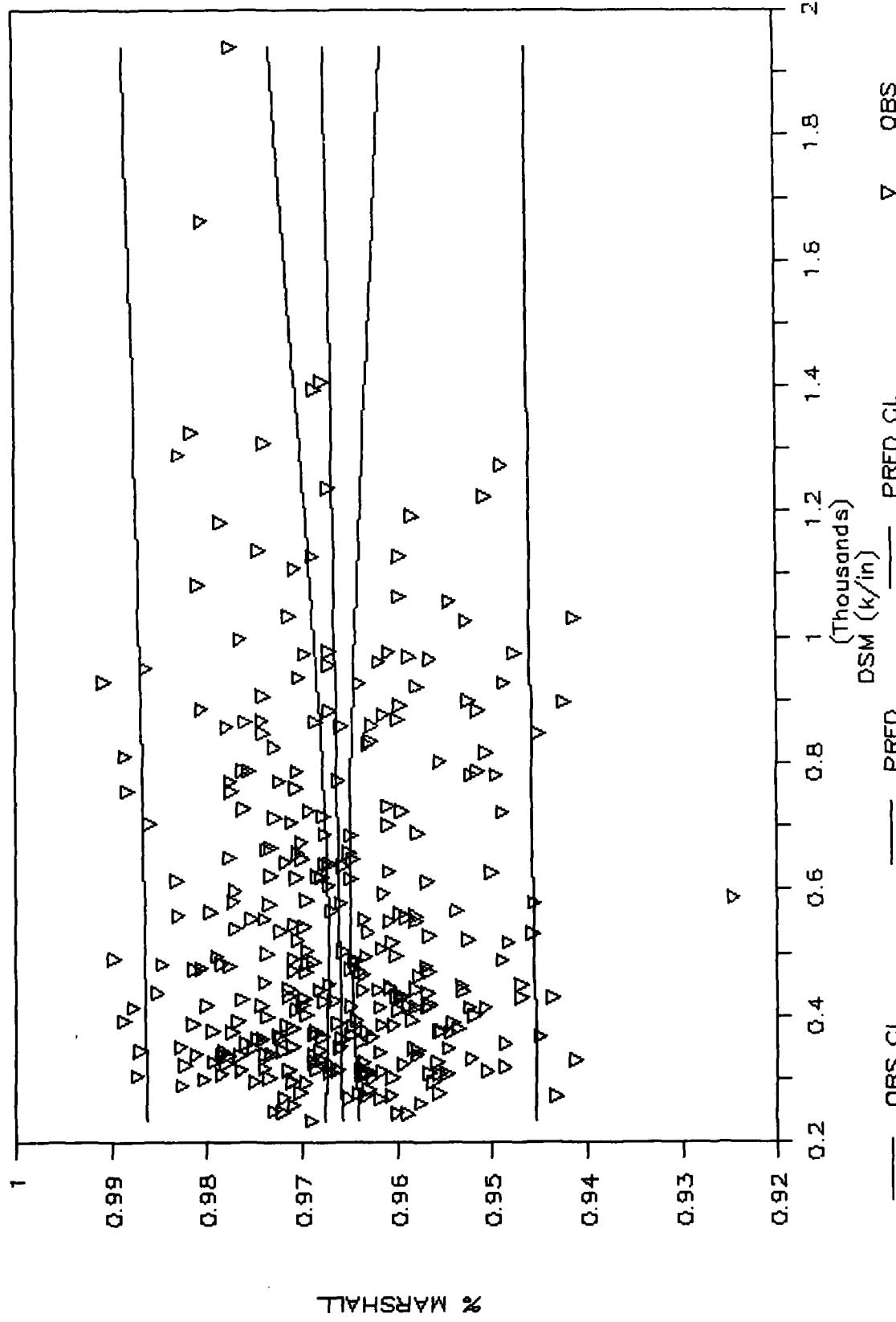


FIGURE 22

PERCENT MARSHALL/DSM (UNADJUSTED) COMBINED NUCLEAR DATA BASE

LINEAR REGRESSION - COMBINED NUCLEAR

$$\sigma_{vd} = a + b \text{ dsm}$$

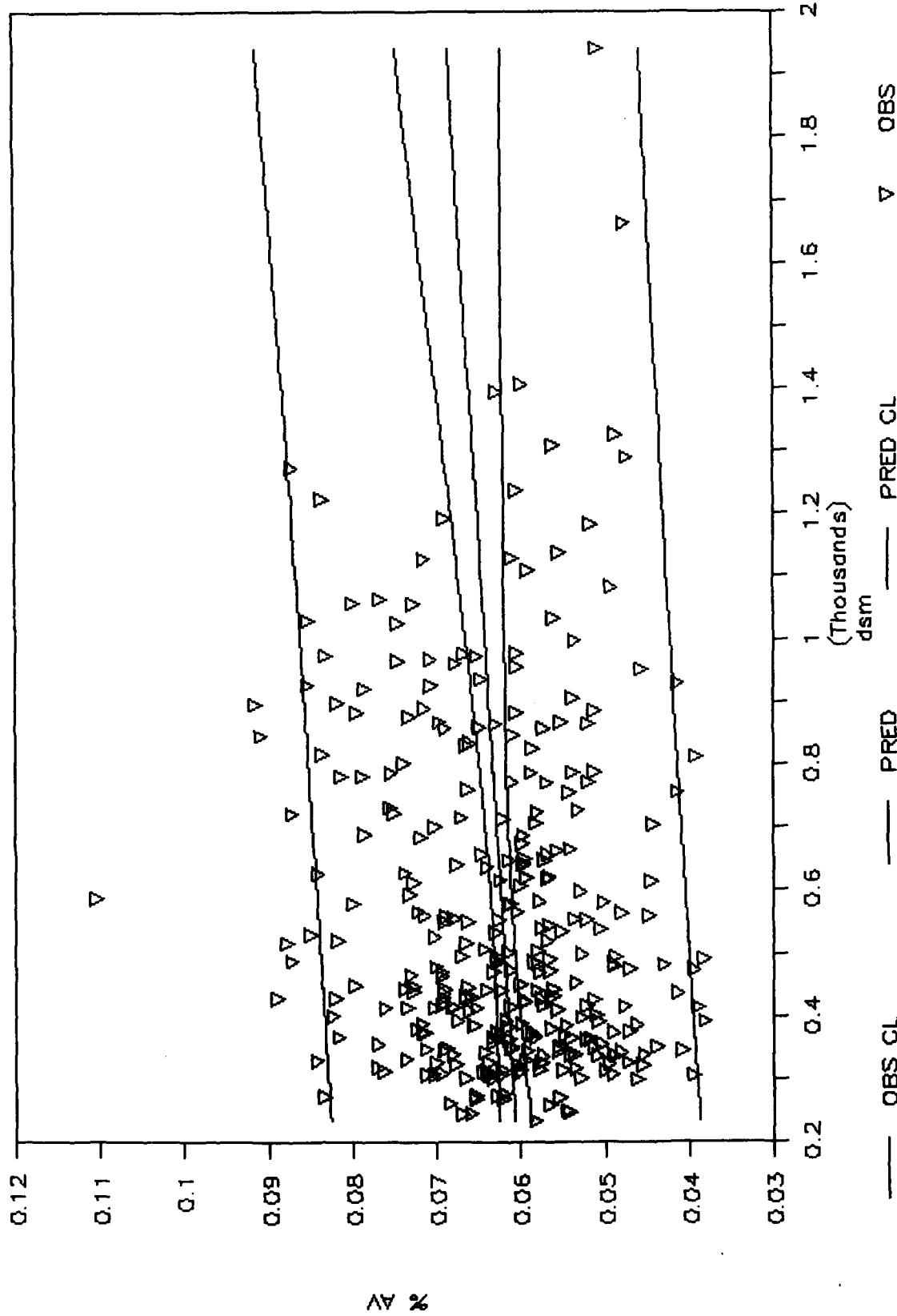


FIGURE 23

IN-PLACE AIR VOIDS/DSM (UNADJUSTED) COMBINED NUCLEAR DATA BASE

LINEAR REGRESSION - COMBINED DATA

$$\% \text{ MARSHALL} = a + b \text{ DSMTC}$$

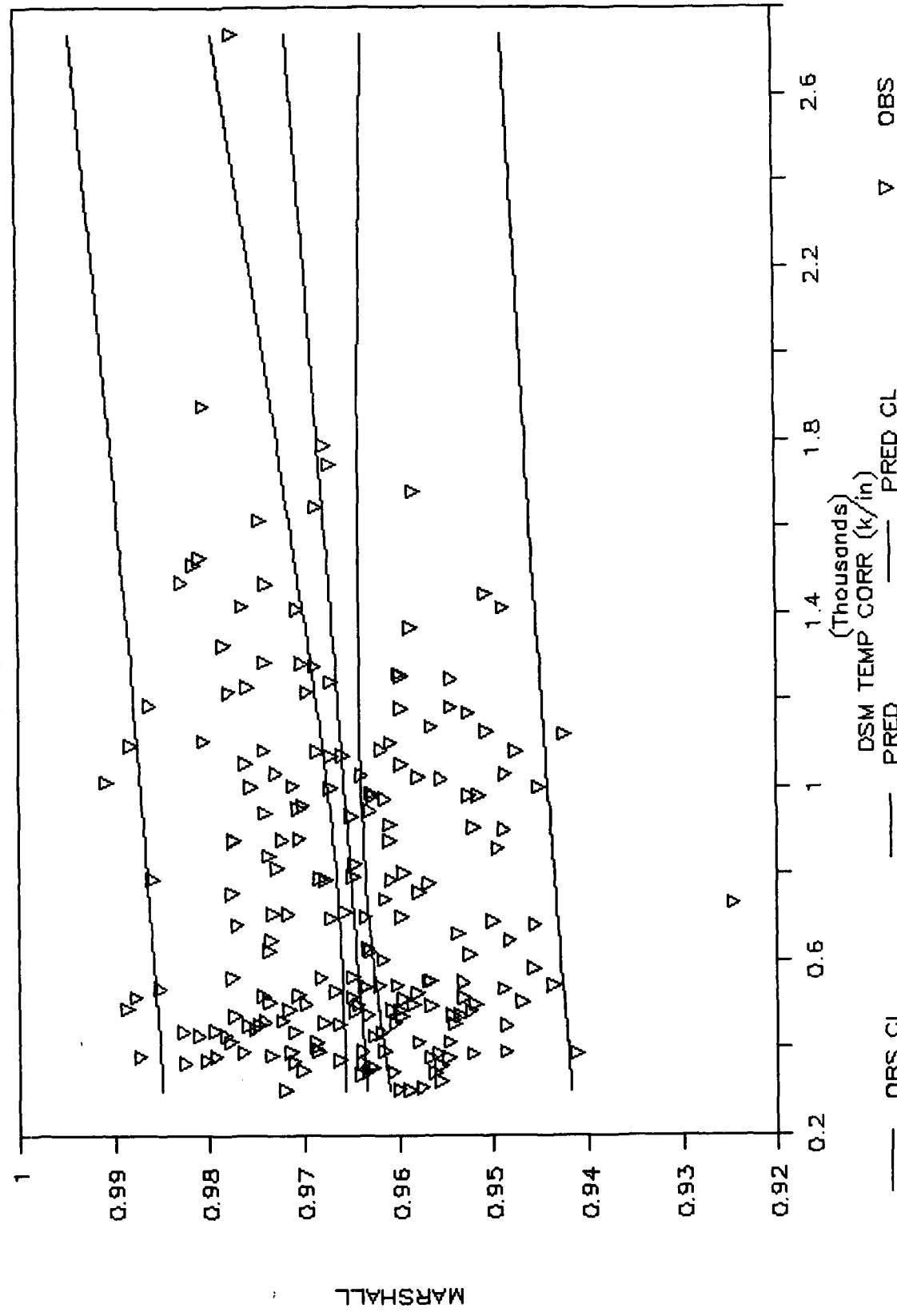


FIGURE 24

PERCENT MARSHALL/DSM (TEMP ADJUSTED) COMBINED NUCLEAR DATA BASE

LINEAR REGRESSION - COMBINED DATA

$$\Delta V = a + b \text{ DSMTC}$$

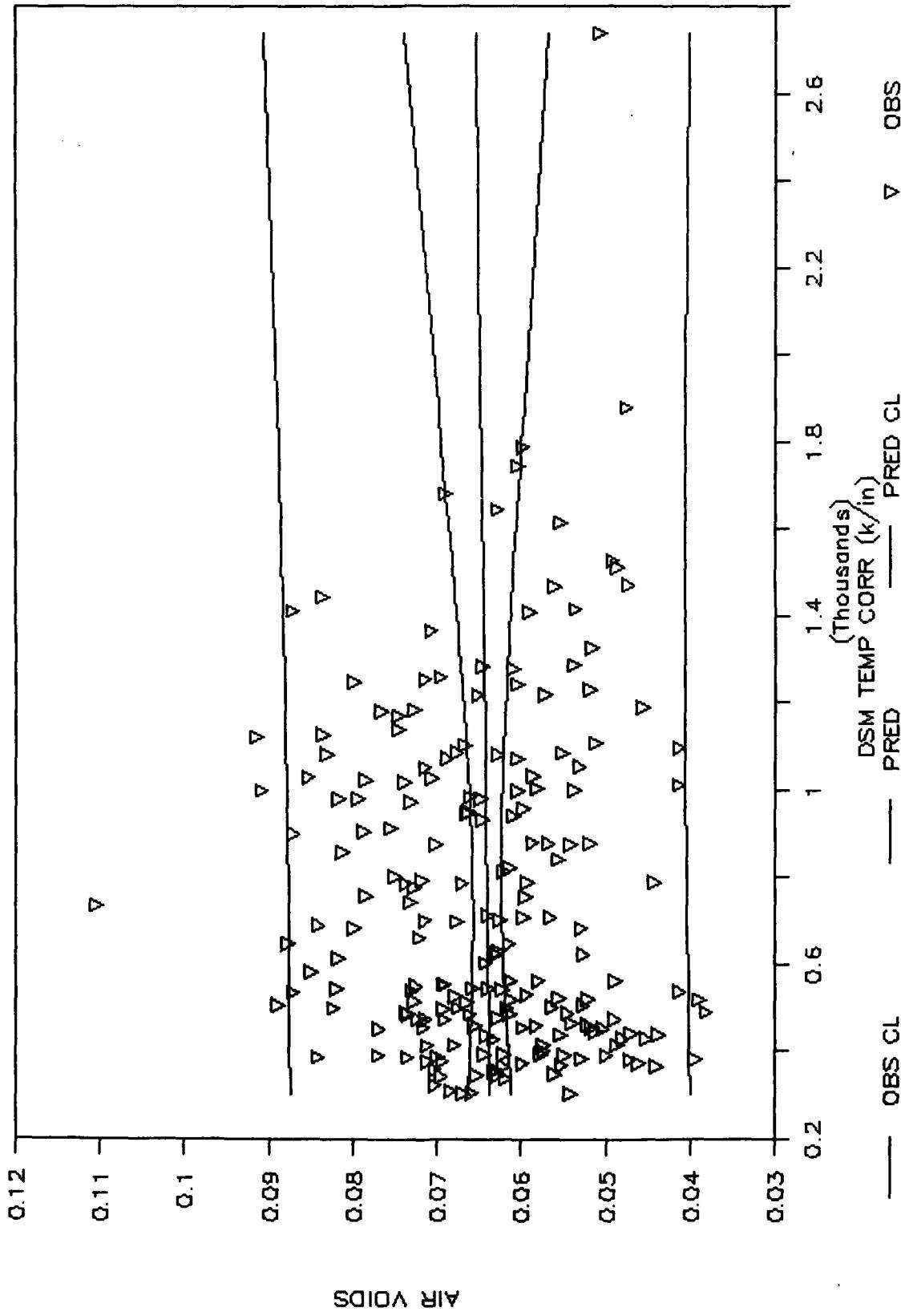


FIGURE 25

IN-PLACE AIR VOIDS/DSM (TEMP ADJUSTED) COMBINED NUCLEAR DATA BASE

TABLE D-5
TETERBORO CORE CORRELATIONS

DATE	LOT	STA ft	OFFSET ft	NDT NO.	CORE NO.	TEMP CORR		CORE			
						DSM k/in	DSM k/in	UNIT WT pcf	MARSHALL DENSITY	IN PLACE AIR Voids	
7-13-87	7	31.00	43 L	73	RD-1	430	473	152.3	96.2%	6.7%	
7-14-87	8	33.00	43 L	74	RD-3	488	537	148.8	94.8%	8.9%	
		33.00	56 R	2	RD-2	429	507	148.9	94.9%	8.8%	
		34.00	18 L	56	RD-5	466	541	151.0	96.2%	7.5%	
		34.00	68 L	92	RD-4	1273	1413	148.4	94.6%	9.1%	
7-15-87	9	38.00	18 L	58	RD-6	781	906	151.5	96.0%	7.2%	
		39.00	6.5 R	41	RD-7	826	1032	154.3	97.8%	5.5%	
		41.00	56 R	6	RD-8	1395	1646	153.5	97.3%	6.0%	
7-16-87	10	45.00	56 R	8	RD-9	521	615	149.8	94.9%	8.3%	
		46.00	32 R	26	RD-10	401	501	149.6	94.8%	8.4%	
		47.00	43 L	81	RD-11	444	489	152.3	96.5%	6.7%	
7-20-87	12	55.00	43 L	85	RD-14	1663	1879	155.1	97.9%	5.0%	
		55.00	56 R	13	RD-12	1408	1788	152.4	96.1%	6.7%	
		55.00	6.5 R	49	RD-13	1941	2737	154.5	97.5%	5.4%	
7-21-87	13	56.00	18 L	67	RD-15	1309	1467	151.8	96.3%	7.0%	
		58.00	68 L	104	RD-16	1327	1512	153.4	97.3%	6.0%	
		59.00	56 R	15	RD-17	802	1018	152.1	96.5%	6.8%	
7-22-87	14	64.00	32 R	35	RD-19	706	1003	151.8	96.7%	7.0%	
						AVG	923	1115	151.8	96.2%	7.1%
						STD	478	617	2.0	1.0%	1.2%
						COV	51.8%	55.4%	1.3%	1.1%	17.0%

TABLE D-6
LEESBURG CORE CORRELATIONS

DATE	LOT	STA ft	OFFSET ft	NDT NO.	CORE NO.	TEMP CORR		CORE		
						DSM k/in	DSM k/in	UNIT WT pcf	MARSHALL DENSITY	IN PLACE AIR Voids
8-4-87	1	2.53	15L	2	C-1	374	475	159.3	98.0%	4.6%
		6.07	5L	24	C-2	394	500	156.9	96.5%	6.1%
		8.59	5R	61	C-3	245	306	157.0	96.6%	6.0%
		13.50	15R	94	C-4	309	380	156.7	96.4%	6.2%
		15.50	5R	68	C-5	363	454	157.7	97.0%	5.6%
		22.50	15L	12	C-7	470	554	156.9	96.5%	6.1%
		26.09	5L	44	C-8	313	373	155.1	95.4%	7.1%
		28.62	15L	15	C-9	579	683	152.0	93.5%	9.0%
		29.62	5R	82	C-10	440	515	155.7	95.8%	6.8%
		1.50	15R	88	C-11	441	542	156.4	96.2%	6.4%
		7.62	15R	91	C-12	247	304	157.9	97.2%	5.5%
					Avg	380	462	156.5	96.3%	6.3%
					Std	96	110	1.8	1.1%	1.1%
					Cov	25.2%	23.7%	1.1%	1.1%	16.9%

TABLE D-7
OCEAN CITY CORE CORRELATIONS

OCEAN CITY CORE CORRELATIONS
UNCORRECTED DSM

DATE	LOT	STA ft	OFFSET ft	NDT NO.	CORE NO.	DSM k/in	CORE		
							UNIT WT pcf	MARSHALL DENSITY	IN PLACE AIR Voids
5-13-87	5	47.00	4 L	104	3-1	521	147.4	97.1%	5.6%
		42.50	5 R	138	3-2	311	147.4	97.1%	5.6%
		2.50	4 L	206	4-1	339	146.4	96.5%	6.2%
		46.75	95 R	15	4-2	392	148.5	97.9%	4.9%
		46.98	28 R	47	4-4	566	146.6	96.6%	6.1%
		48.35	103 L		5-4		150.4	98.4%	3.6%
					Avg	426	147.3	97.1%	5.7%
					Std	101	0.7	0.5%	0.5%
					Cov	23.6%	0.5%	0.5%	8.4%

TABLE D-8
COMBINED DATA BASE CORE CORRELATIONS

COMBINED CORE

DATE	LOT	STA ft	OFFSET ft	NDT NO.	CORE NO.	DSM k/in	DSM k/in	CORE			
								TEMP	CORR	UNIT WT MARSHALL IN PLACE	
								pcf	DENSITY AIR Voids	*****	
7-13-87	TET 7	31.00	43 L	73	RD-1	430	473	152.3	96.2%	6.7%	
7-14-87	TET 8	33.00	43 L	74	RD-3	488	537	148.8	94.8%	8.9%	
		33.00	56 R	2	RD-2	429	507	148.9	94.9%	8.8%	
		34.00	18 L	56	RD-5	466	541	151.0	96.2%	7.5%	
		34.00	68 L	92	RD-4	1273	1413	148.4	94.6%	9.1%	
7-15-87	TET 9	38.00	18 L	58	RD-6	781	906	151.5	96.0%	7.2%	
		39.00	6.5 R	41	RD-7	826	1032	154.3	97.8%	5.5%	
		41.00	56 R	5	RD-8	1395	1646	153.5	97.3%	6.0%	
7-16-87	TET 10	45.00	56 R	8	RD-9	521	615	149.8	94.9%	8.3%	
		46.00	32 R	26	RD-10	401	501	149.6	94.8%	8.4%	
		47.00	43 L	81	RD-11	444	489	152.3	96.5%	6.7%	
7-20-87	TET 12	55.00	43 L	85	RD-14	1663	1879	155.1	97.9%	5.0%	
		55.00	56 R	13	RD-12	1408	1788	152.4	96.1%	6.7%	
		55.00	6.5 R	49	RD-13	1941	2737	154.5	97.5%	5.4%	
7-21-87	TET 13	56.00	18 L	67	RD-15	1309	1467	151.8	96.3%	7.0%	
		58.00	68 L	104	RD-16	1327	1512	153.4	97.3%	6.0%	
		59.00	56 R	15	RD-17	802	1018	152.1	96.5%	6.8%	
7-22-87	TET 14	64.00	32 R	35	RD-19	706	1003	151.8	96.7%	7.0%	
8-4-87	LSB 1	2.53	15L	2	C-1	374	475	159.3	98.0%	4.6%	
		6.07	5L	24	C-2	394	500	156.9	96.5%	6.1%	
		8.59	5R	61	C-3	245	306	157.0	96.6%	6.0%	
		13.50	15R	94	C-4	309	380	156.7	96.4%	6.2%	
		15.50	5R	68	C-5	363	454	157.7	97.0%	5.6%	
		22.50	15L	12	C-7	470	554	156.9	96.5%	6.1%	
		26.09	5L	44	C-8	313	373	155.1	95.4%	7.1%	
		28.62	15L	15	C-9	579	683	152.0	93.5%	9.0%	
		29.62	5R	82	C-10	440	515	155.7	95.8%	6.8%	
		1.50	15R	88	C-11	441	542	156.4	96.2%	6.4%	
		7.62	15R	91	C-12	247	304	157.9	97.2%	5.5%	
5-13-87	OCN 5	47.00	4 L	104	3-1	521		147.4	97.1%	5.6%	
		42.50	5 R	138	3-2	311		147.4	97.1%	5.6%	
		2.50	4 L	206	4-1	339		146.4	96.5%	6.2%	
		46.75	95 R	15	4-2	392		148.5	97.9%	4.9%	
		46.98	28 R	47	4-4	566		146.6	96.6%	6.1%	
						Avg	674	867	152.6	96.4%	
						Std	442	584	3.6	1.0%	
						Cov	65.6%	67.3%	2.3%	1.1% 18.1%	

LINEAR REGRESSION - COMBINED CORES

$$\pi_{MARS} = a + b \text{ DSM}$$

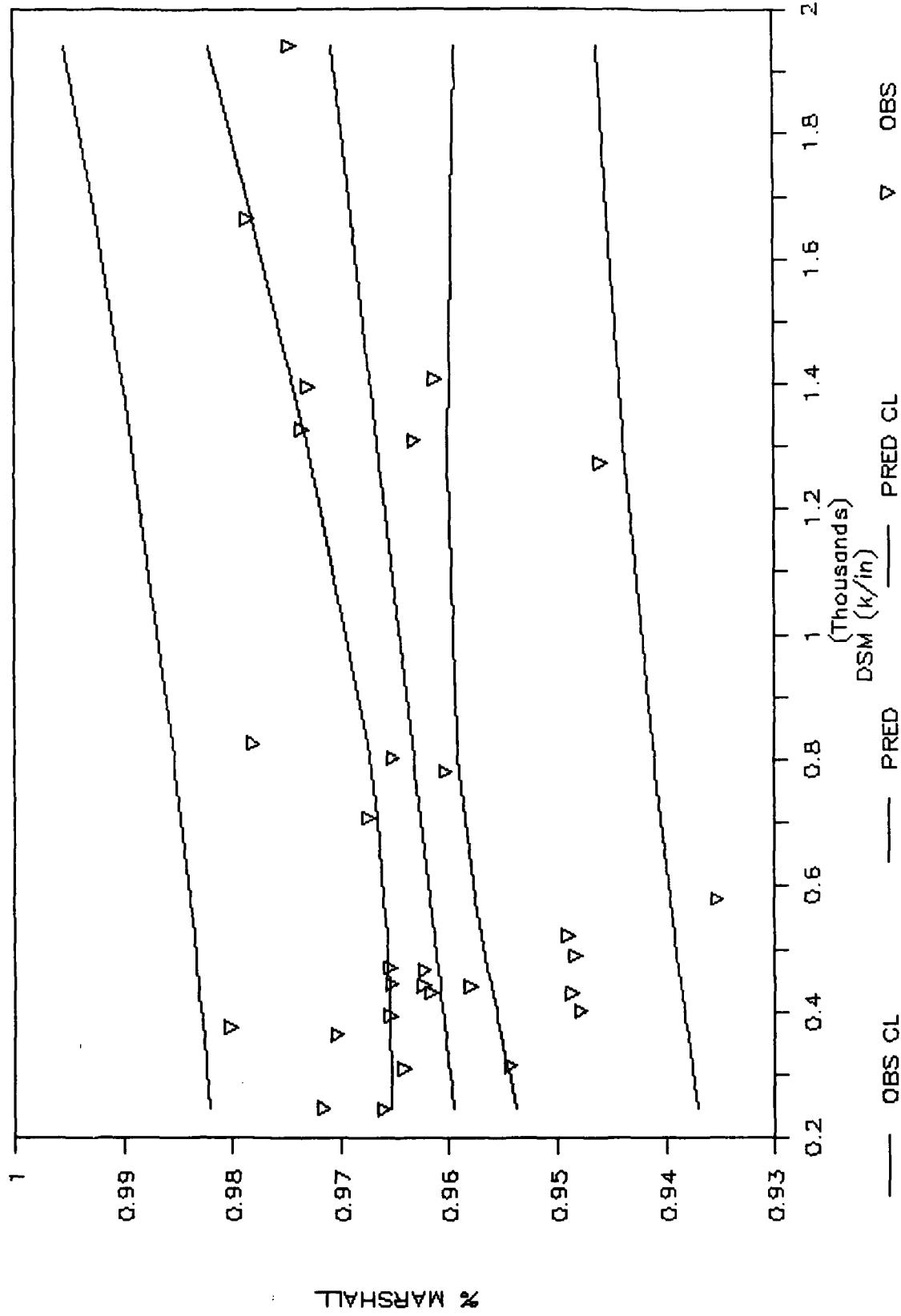


FIGURE 26
MARSHALL DENSITY/DSM (UNADJUSTED) COMBINED CORE DATA BASE

LINEAR REGRESSION - COMBINED CORES

$$\%AV = a + b \text{ DSM}$$

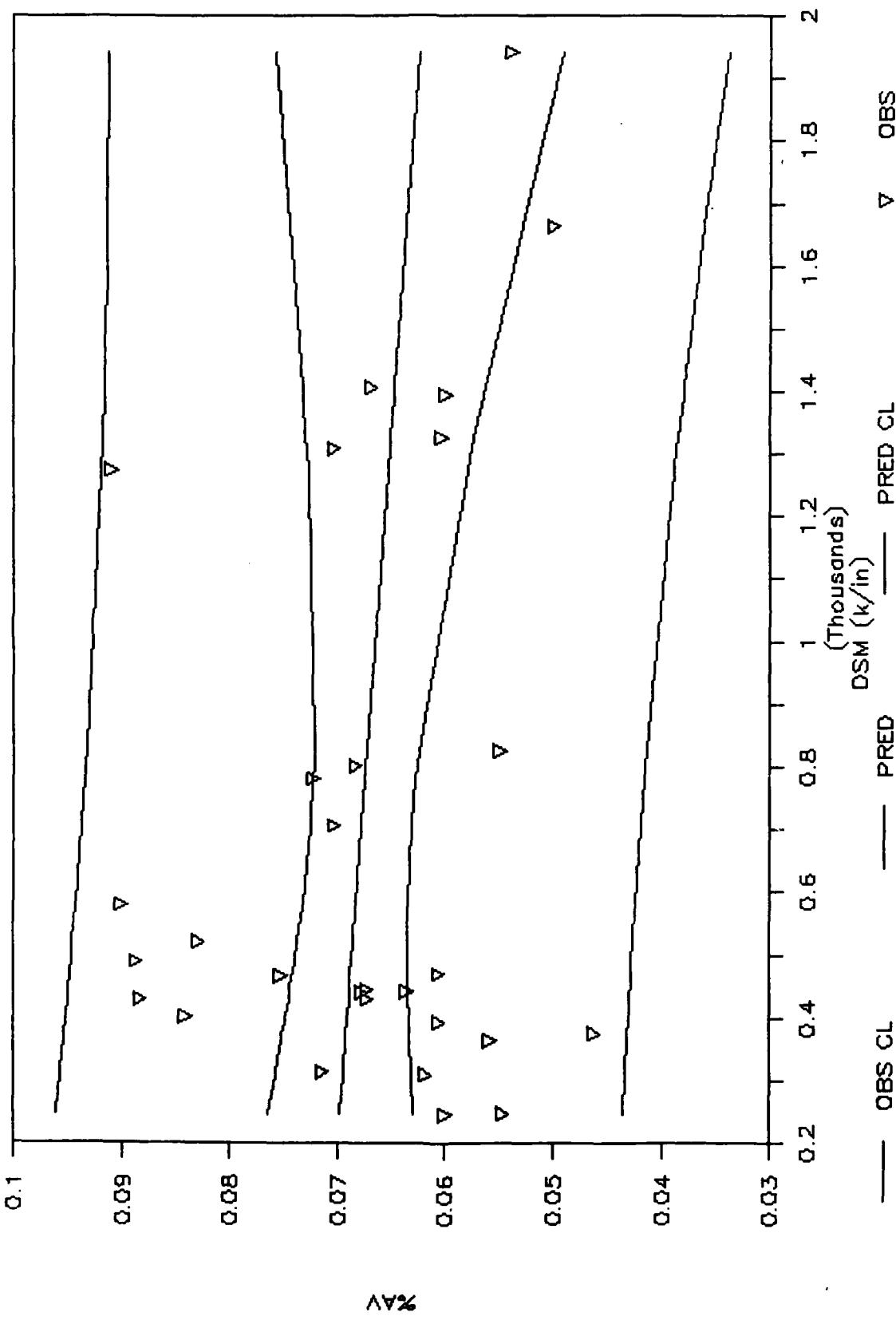


FIGURE 27
IN-PLACE AIR VOIDS/DSM (UNADJUSTED) COMBINED CORE DATA BASE

LINEAR REGRESSION - COMBINED CORE

$$\% \text{ MARSHALL} = a + b \text{ DSMTC}$$

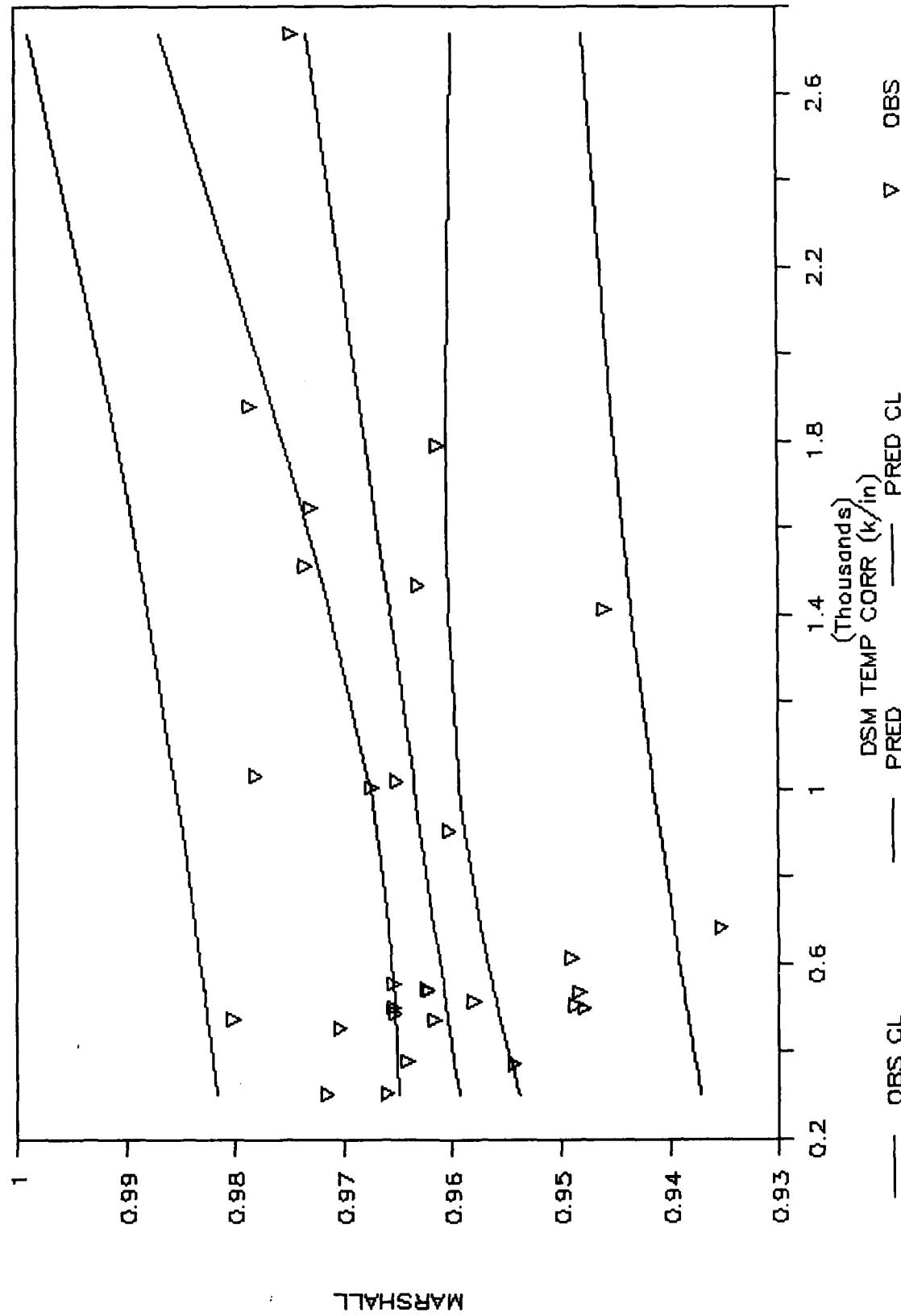


FIGURE 28

MARSHALL DENSITY/DSM (TEMP ADJUSTED) COMBINED CORE DATA BASE

LINEAR REGRESSION - COMBINED CORE

$$AV = a + b \text{ DSMTC}$$

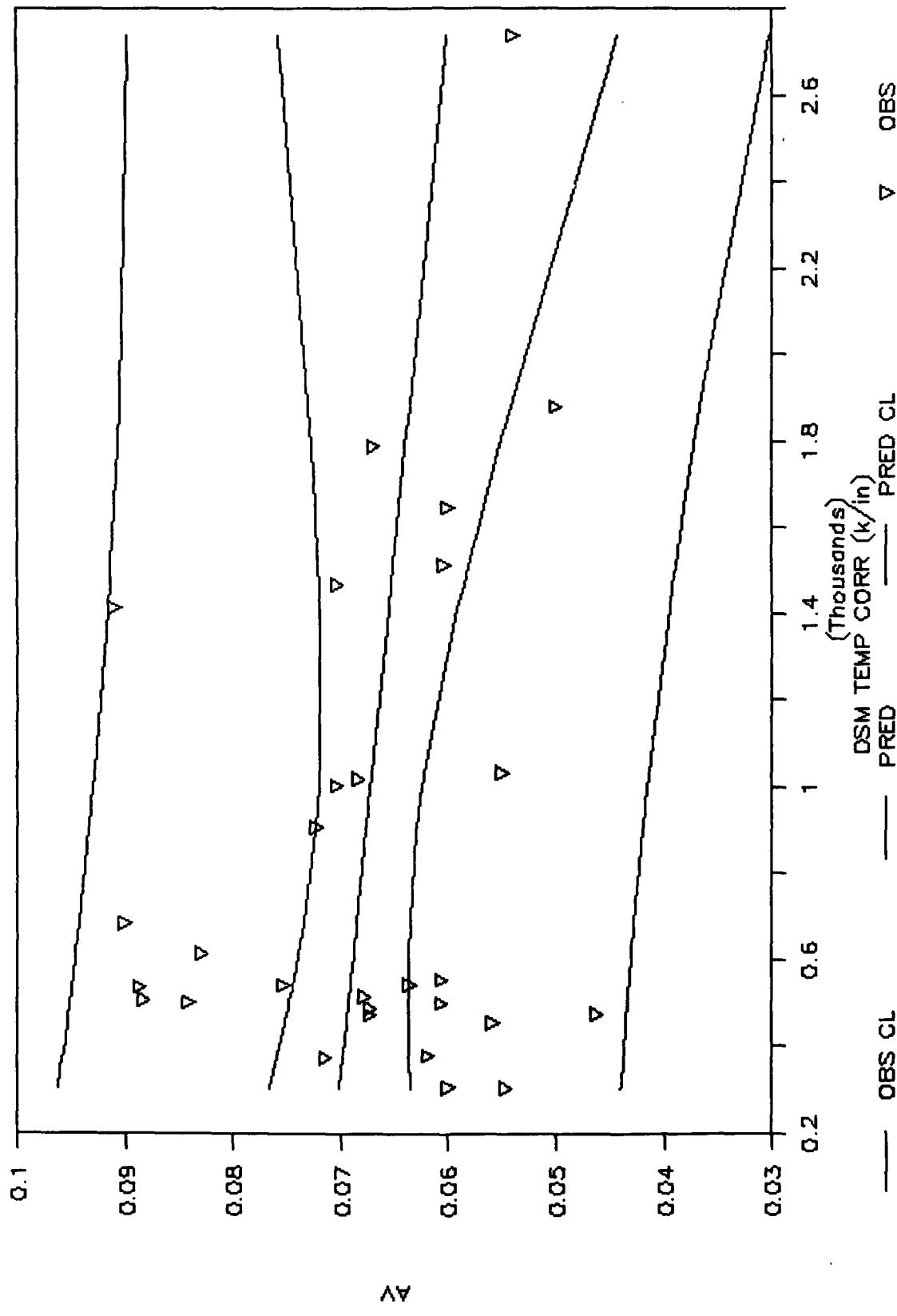


FIGURE 29

IN-PLACE AIR VOIDS/DSM (TEMP ADJUSTED) COMBINED CORE DATA BASE

APPENDIX E
CLASS GROUPINGS

TETCOR2

TABLE E-1

TETERBORO RUNWAY 1-19 OVERLAY
DATA GROUPED BY DSM

THIN LIFT					
UNIT WT MARSHALL IN PLACE					
pcf DENSITY AIR Voids					

STA	OFFSET	NDT	DSM	*****	
ft	ft	NO.	k/in	*****	*****
*****	*****	*****	*****	*****	*****
46.00	32 R	26	401	150.2	95.2%
33.00	56 R	2	429	148.6	94.7%
31.00	43 L	73	430	152.0	96.0%
47.00	43 L	81	444	151.6	96.1%
34.00	18 L	56	466	151.2	96.3%
33.00	43 L	74	488	148.9	94.9%
			Avg	150.4	95.5%
			STD	1.3	0.6%
			COV	6.3%	0.7%
					9.5%
32.00	32 R	19	517	148.8	94.8%
45.00	56 R	8	521	150.3	95.2%
37.15	43 L	76	530	149.2	94.6%
40.00	32 R	23	562	151.4	96.0%
49.00	43 L	82	577	153.6	97.3%
34.00	32 R	20	587	145.1	92.5%
47.00	6.5 R	45	594	151.7	96.1%
62.00	68 L	106	599	154.0	97.7%
			Avg	150.5	95.5%
			STD	2.7	1.6%
			COV	5.6%	1.6%
					21.1%

Table E-1 (Cont'd.)

TETCOR2	STA ft	OFFSET ft	NDT NO.	THIN LIFT			
				DSM K/in	UNIT WT pcf	MARSHALL IN PLACE DENSITY	AIR Voids
	61.00	56 R	16	612	150.8	95.7%	7.3%
	51.00	56 R	11	621	153.5	96.8%	5.9%
	61.00	43 L	88	622	153.4	97.3%	5.7%
	45.00	43 L	80	627	149.9	95.0%	8.4%
	44.00	32 R	25	629	151.6	96.1%	7.4%
	60.00	18 L	69	637	152.2	96.6%	6.4%
	46.00	18 L	62	640	152.6	96.7%	6.8%
	39.00	43 L	77	643	153.3	97.2%	6.0%
	36.00	18 L	57	651	153.4	97.7%	6.0%
	62.00	32 R	34	658	152.1	96.5%	6.5%
	63.00	56 R	17	663	152.8	97.4%	5.6%
	60.00	32 R	33	675	152.9	97.0%	6.0%
	32.00	18 L	55	684	151.4	96.5%	7.2%
	35.00	43 L	75	689	150.3	95.8%	7.9%
				Avg	152.2	96.6%	6.6%
				Std	1.2	0.7%	0.8%
				Cov	3.6%	0.8%	12.7%
	38.00	32 R	22	701	151.6	96.1%	7.0%
	62.00	18 L	70	705	155.4	98.6%	4.4%
	64.00	32 R	35	706	152.4	97.1%	5.8%
	50.00	68 L	100	714	153.5	97.3%	6.2%
	43.00	43 L	79	716	152.7	96.8%	6.7%
	36.00	32 R	21	722	148.9	94.9%	8.7%
	44.00	68 L	97	723	151.4	95.9%	7.5%
	65.00	6.5 R	54	727	153.2	97.6%	5.3%
	35.00	6.5 R	39	732	150.8	96.1%	7.5%
	40.00	18 L	59	755	154.2	97.7%	5.4%
	63.00	6.5 R	53	757	155.1	98.8%	4.1%

Table E-1 (Cont'd.)

TETCOR2

THIN LIFT					
UNIT WT MARSHALL IN PLACE					
	STA ft	OFFSET ft	NDT NO.	DSM k/in	PCF DENSITY AIR Voids
33.00	6.5 R	38	761	152.3	97.0%
63.00	4.3 L	89	772	153.4	97.7%
65.00	4.3 L	90	772	152.6	97.2%
41.00	4.3 L	78	781	149.8	94.9%
38.00	18 L	58	781	150.2	95.2%
64.00	18 L	71	787	152.3	97.0%
65.00	56 R	18	788	153.1	97.5%
			Avg	152.4	96.9%
			STD	1.7	1.1%
			COV	4.1%	1.1%
59.00	56 R	15	802	150.6	95.5%
48.00	32 R	27	816	150.0	95.1%
39.00	6.5 R	41	826	153.5	97.3%
60.00	68 L	105	830	151.8	96.3%
31.00	56 R	1	836	152.5	96.3%
35.00	56 R	3	846	148.3	94.5%
50.00	18 L	64	848	153.7	97.4%
49.00	56 R	10	858	152.4	96.6%
50.00	32 R	28	858	154.3	97.8%
52.00	68 L	101	860	152.6	96.3%
52.00	32 R	129	865	154.7	97.6%
42.00	32 R	24	865	152.8	96.8%
31.00	6.5 R	37	868	154.3	97.4%
61.00	6.5 R	52	868	151.3	96.0%
48.00	68 L	99	877	151.7	96.1%
42.00	68 L	96	883	150.1	95.1%
53.00	4.3 L	84	883	153.3	96.7%
41.00	6.5 R	42	886	154.7	98.1%
39.00	56 R	5	891	151.4	96.0%

Table E-1 (Cont'd.)

TETCOR2

THIN LIFT			UNIT WT MARSHALL IN PLACE		
STA	OFFSET	NDT NO.	DSM k/in	pcf DENSITY	AIR VOIDS
45.00	6.5 R	44	897	148.7	94.2%
44.00	18 L	61	898	150.3	95.2%
					8.2%
54.00	32 R	30	907	154.4	97.4%
32.00	68 L	91	921	150.3	95.8%
48.00	18 L	63	926	152.1	96.4%
46.00	68 L	98	927	149.7	94.9%
42.00	18 L	60	929	156.3	99.1%
49.00	6.5 R	46	936	153.1	97.0%
37.15	6.5 R	40	952	155.6	98.6%
52.00	18 L	65	956	153.3	96.7%
59.00	43 L	87	961	151.6	96.2%
37.15	56 R	4	966	150.9	95.6%
59.00	6.5 R	51	969	151.1	95.9%
40.00	68 L	95	974	149.5	94.8%
43.00	6.5 R	43	974	153.0	97.0%
51.00	43 L	83	976	152.3	96.1%
53.00	56 R	12	978	153.3	96.7%
58.00	32 R	32	998	153.9	97.6%
					5.4%
54.00	68 L	102	953	152.5	96.6%
54.00	18 L	66	25	1.9	1.2%
47.00	56 R	9	2.6%	1.3%	1.2%
					18.5%

Table E-1 (Cont'd.)

TETCOR2

THIN LIFT					
STA ft	OFFSET ft	NDT NO.	DSM k/in	UNIT WT MARSHALL IN PLACE pcf	DENSITY AIR Voids
36.00	68 L	93	1064	96.0%	7.7%
57.00	6.5 R	50	1083	98.1%	4.9%
57.00	56 R	14	1110	97.1%	5.9%
38.00	68 L	94	1129	96.0%	7.1%
57.00	43 L	86	1130	96.9%	6.1%
56.00	32 R	31	1137	97.4%	5.5%
58.00	18 L	68	1183	154.2	97.8%
53.00	6.5 R	48	1193	151.9	95.8%
43.00	56 R	7	1224	150.0	95.1%
51.00	6.5 R	47	1238	153.3	96.7%
34.00	68 L	92	1273	148.9	94.9%
56.00	68 L	103	1291	154.9	98.3%
56.00	18 L	67	1309	153.5	97.4%
58.00	68 L	104	1327	154.7	98.1%
41.00	56 R	6	1395	152.8	96.8%
55.00	56 R	13	1408	153.4	96.8%
55.00	43 L	85	1663	155.4	98.0%
55.00	6.5 R	49	1941	154.9	97.7%
			Avg	1249	96.7%
			Std	214	1.8
			Cov	17.1%	1.2%
					1.1%
					19.3%

LSBCOR2

TABLE E-2

LEESBURG MUNICIPAL AIRPORT
DATA GROUPED BY DSM

3411				3411			
STA ft	OFFSET ft	NDT NO.	DSM k/in	UNIT WT **	MARSHALL IN PLACE **	AIR Voids **	
19.50	5R	72	244	155.8	95.9%	6.7%	
8.50	5R	61	245	156.0	96.0%	6.6%	
7.50	15R	91	247	158.0	97.2%	5.4%	
26.50	15L	14	263	155.6	95.7%	6.8%	
8.00	5L	26	273	156.5	96.3%	6.3%	
6.50	15L	4	273	156.1	96.1%	6.5%	
19.50	15R	97	277	156.7	96.4%	6.2%	
27.50	15L	101	277	155.3	95.5%	7.0%	
20.50	5R	73	279	157.7	97.0%	5.6%	
14.00	5L	32	283	156.5	96.3%	6.3%	
18.50	15L	10	290	159.7	98.3%	4.4%	
31.50	15L	103	295	155.4	95.6%	7.0%	
9.50	5R	62	295	157.8	97.1%	5.5%	
14.50	5R	67	299	159.3	98.0%	4.6%	
				Avg	156.9	96.5%	6.1%
				Std	1.4	0.8%	0.8%
				Cov	6.5%	0.9%	13.3%
24.50	15L	13	302	156.4	96.3%	6.3%	
20.50	15L	11	302	158.2	97.3%	5.3%	
6.50	5R	59	306	160.4	98.7%	3.9%	
3.50	15R	89	308	155.2	95.5%	7.1%	
25.50	15L	100	308	155.3	95.5%	7.0%	
27.00	5L	45	308	156.6	96.4%	6.2%	
13.50	15R	94	309	155.5	95.6%	6.9%	
10.00	5L	28	311	156.3	96.2%	6.4%	
26.00	5L	44	313	157.0	96.6%	6.0%	
13.50	5R	66	313	157.9	97.1%	5.5%	
10.50	5R	63	314	158.7	97.6%	5.0%	
4.50	5R	57	315	156.6	96.4%	6.2%	

Table E-2 (Cont'd.)
LSBCOR2

STA	OFFSET ft	NDT NO.	DSM k/in	UNIT WT MARSHALL IN PLACE ** PCF DENSITY AIR Voids
7.50	5R	60	316	96.8%
21.50	15R	98	319	94.9%
30.00	5L	48	326	95.6%
15.00	5L	33	326	95.6%
25.50	5R	78	328	96.9%
30.50	15L	16	329	97.9%
26.50	5R	79	332	94.1%
5.50	15R	90	337	95.2%
24.00	5L	42	338	97.8%
9.50	15R	92	338	96.9%
13.00	5L	31	339	95.7%
4.10	5L	22	344	96.9%
21.50	5R	74	344	97.9%
31.00	5L	49	349	95.8%
0.50	15L	1	350	98.1%
1.50	5R	54	351	96.2%
18.50	5R	71	351	96.9%
10.50	15L	6	356	97.8%
7.00	15L	25	356	97.5%
15.50	5R	68	363	97.1%
19.00	5L	37	364	98.3%
1.00	5L	19	365	94.9%
16.50	5R	69	367	97.6%
23.50	15L	99	367	97.5%
9.00	5L	27	374	97.4%
2.50	15L	2	374	95.4%
20.00	5L	38	375	97.7%
24.50	5R	77	376	96.3%
0.50	15R	53	380	97.9%
5.00	5L	23	383	95.3%
12.00	5L	30	385	7.2%
				97.9%

3411

Table E-2 (Cont'd.)

LSBCOR2

3411									
STA	OFFSET ft	NDT NO.	DSM			MARSHALL IN PLACE			
			PCF	DENSITY	AIR Voids	WT	PCF	DENSITY	AIR Voids
25.00	5L	43	385	156.1	96.0%	6.6%	156.0	96.0%	6.6%
23.50	5R	76	389	157.0	96.6%	6.0%	157.7	97.0%	5.6%
27.50	5R	80	389	155.1	95.4%	7.2%	160.7	98.9%	3.8%
5.50	5R	58	393	155.7	95.8%	6.8%	155.7	95.8%	6.2%
21.00	5L	39	393	156.7	96.4%	5.3%	158.2	97.4%	5.3%
6.00	5L	24	394	157.1	96.6%	6.0%	157.1	96.6%	6.0%
12.50	15L	7	399	1.7	1.0%	17.2%	1.7	1.0%	17.2%
				1.1%			1.1%		
			Avg	347			156.0	96.0%	6.6%
			Std	30			157.7	97.0%	5.6%
			Cov	8.6%			155.7	95.8%	6.8%
					Avg		156.0	96.0%	6.6%
					Std		157.7	97.0%	5.6%
					Cov		155.7	95.8%	6.8%
29.00	5L	47	409	156.0	96.0%	6.6%	156.0	96.0%	6.6%
8.50	15L	5	410	157.7	97.0%	5.6%	157.7	97.0%	5.6%
3.00	5L	21	414	160.5	98.8%	3.9%	154.8	95.2%	7.3%
2.50	5R	55	414	160.5	98.8%	3.9%	156.8	96.5%	6.1%
29.50	15L	102	415	154.8	95.2%	7.3%	158.3	97.4%	5.2%
11.50	5R	64	415	156.8	96.5%	6.1%	155.5	95.7%	6.9%
3.50	5R	56	416	158.3	97.4%	5.2%	157.1	96.7%	5.9%
32.00	5L	50	418	155.5	95.7%	5.9%	153.3	94.4%	8.2%
12.50	5R	65	425	157.1	96.7%	5.9%	157.6	97.0%	5.6%
2.05	5L	20	429	153.3	94.4%	8.2%	156.0	96.0%	6.6%
30.50	5R	83	429	155.5	95.7%	5.9%	155.9	95.9%	6.6%
11.00	5L	29	430	155.5	95.7%	6.9%	155.5	95.7%	6.9%
28.00	5L	46	430	160.1	98.5%	4.1%	154.9	95.3%	7.3%
17.00	5L	35	437	160.1	98.5%	4.1%	156.6	96.4%	6.2%
17.50	15R	96	438	154.0	94.0%	8.4%	156.3	96.2%	6.4%
29.50	5R	82	440	154.0	94.0%	8.4%	156.3	96.8%	5.8%
1.50	15R	88	441	156.6	96.4%	6.2%	157.3	96.8%	5.8%
11.50	15R	93	442	157.3	97.4%	5.8%			
14.50			443						

OCNCOR2

TABLE E-3

OCEAN CITY AIRPORT
DATA GROUPED BY DEM

APRON OVERLAY				DSM k/in	NDT NO.	UNIT WT MARSHALL IN PLACE ** PCF DENSITY AIR VOIDS
STA	OFFSET ft			Avg	Std	Cov
48.00	52 R	35	259	147.3	97.1%	5.6%
49.50	13 L	61	269	146.4	96.5%	6.2%
49.00	80 R	20	270	147.5	97.2%	5.5%
47.00	52 R	36	297	147.3	97.1%	5.6%
				147.1	97.0%	5.8%
				0.4	0.3%	0.3%
				0.3%	0.3%	4.5%
48.00	26 R	46	301	145.7	96.0%	6.7%
1.50	5 L	207	307	146.2	96.3%	6.4%
48.50	13 R	51	308	148.5	97.8%	4.9%
48.50	65 R	29	313	146.1	96.3%	6.4%
48.50	39 R	40	313	144.2	95.1%	7.6%
49.50	13 R	50	317	147.8	97.4%	5.3%
1.50	15 R	208	322	149.0	98.2%	4.5%
48.00	105 R	4	322	146.7	96.7%	6.0%
2.00	15 L	214	338	148.2	97.6%	5.1%
2.50	5 L	206	339	147.8	97.4%	5.4%
47.50	39 R	41	340	148.5	97.8%	4.9%
2.00	5 R	201	346	147.5	97.2%	5.5%
47.25	93 R	14	346	145.3	95.8%	6.9%
3.50	15 R	210	346	146.9	96.8%	5.9%
45.50	39 R	43	350	146.6	96.6%	6.1%

Table E-2 (cont'd.)

LSBCOR2

3411

STA ft	OFFSET ft	NDT NO.	DSM k/in	UNIT WT MARSHALL IN PLACE **pcf DENSITY AIR Voids		
				448	154.9	95.3%
15.50	15R	95	470	155.5	95.6%	6.9%
22.50	15L	12	474	156.8	96.5%	6.1%
23.00	5L	41	480	158.9	97.8%	4.9%
22.50	5R	75	496	156.5	96.3%	6.3%
16.00	5L	34	499	158.2	97.4%	5.3%
17.50	5R	70				
			Avg	156.7	96.4%	6.2%
			Std	1.6	1.0%	1.0%
			Cov	1.0%	1.0%	15.8%
22.25	5L	40	508	156.3	96.2%	6.4%
31.50	5R	84	534	156.5	96.3%	6.3%
16.50	15L	9	553	156.6	96.3%	6.3%
28.50	5R	81	566	155.0	95.4%	7.2%
28.50	15L	15	579	153.7	94.6%	8.0%
4.50	15L	3	648	156.8	96.5%	6.1%
			Avg	155.8	95.9%	6.7%
			Std	1.1	0.7%	0.7%
			Cov	0.7%	0.7%	9.9%

Table E-3 (Cont'd.)
OCNCOR2

3411				UNIT WT MARSHALL IN PLACE ** PCF DENSITY AIR Voids		
STA ft	OFFSET ft	NDT NO.	DSM k/in*	*****	*****	*****
45.00	52 R	38	359	146.3	96.4%	6.3%
3.50	5 L	205	363	146.5	96.6%	6.1%
48.25	93 R	12	368	143.4	94.5%	8.2%
1.00	15 L	215	370	146.4	96.5%	6.2%
47.75	93 R	13	370	147.6	97.2%	5.5%
48.00	BL	57	371	147.0	96.9%	5.9%
48.50	13 L	62	374	145.0	95.6%	7.1%
4.00	5 R	203	376	144.9	95.5%	7.2%
47.50	65 R	30	382	147.3	97.1%	5.6%
47.50	13 R	52	387	148.9	98.1%	4.6%
46.75	93 R	15	392	148.2	97.7%	5.1%
			Avg	146.8	96.7%	6.0%
			Std	1.4	0.9%	0.9%
			Cov	7.8%	1.0%	15.1%
49.50	103 L	64	402	148.0	97.0%	5.1%
48.00	80 R	22	414	145.2	95.7%	7.0%
1.00	5 R	200	415	145.5	95.9%	6.8%
49.25	93 R	10	417	147.2	97.0%	5.7%
47.00	105 R	6	424	146.8	96.8%	6.0%
45.00	26 R	49	427	148.1	97.6%	5.1%
47.50	105 R	5	428	147.1	97.0%	5.8%
45.25	93 R	18	443	145.4	95.8%	6.9%
49.50	65 R	28	443	147.4	97.1%	5.6%
48.50	80 R	21	450	143.7	94.7%	8.0%
46.00	52 R	37	451	146.8	96.7%	6.0%
44.50	39 R	44	454	147.8	97.4%	5.3%
4.50	5 L	204	472	147.3	97.1%	5.6%
48.50	103 L	65	474	149.8	98.1%	4.0%
45.00	BL	60	476	148.8	98.1%	4.7%

Table E-3 (cont'd.)
OCNCOR2

3411				3411			
STA	OFFSET	NDT	DSM	UNIT WT	MARSHALL IN PLACE	***pcf	AIR Voids
ft	ft	NO.	K/in				
3.00	15 L	213	483	14.9	98.5%	4.3%	
49.50	105 R	1	484	14.8	97.8%	4.9%	
49.00	BL	56	487	14.7	96.9%	5.8%	
44.50	65 R	33	488	14.6	96.4%	6.3%	
47.50	80 R	23	495	14.5	96.0%	6.7%	
				AVG	147.1	96.9%	5.8%
				STD	1.5	0.9%	1.0%
				COV	1.0%	0.9%	16.6%
48.50	105 R	3	505	147.1	96.9%	5.8%	
45.50	105 R	9	516	145.7	96.0%	6.7%	
44.50	13 R	55	528	145.2	95.7%	7.0%	
46.00	BL	59	535	147.5	97.2%	5.5%	
48.75	93 R	11	538	148.2	97.7%	5.1%	
45.50	80 R	27	550	145.4	95.8%	6.9%	
46.50	105 R	7	551	145.8	96.1%	6.6%	
46.50	39 R	42	555	145.5	95.9%	6.8%	
3.00	5 R	202	559	145.4	95.8%	6.9%	
49.50	80 R	19	564	148.6	98.0%	4.8%	
47.00	26 R	47	566	146.7	96.7%	6.0%	
45.50	65 R	32	579	146.6	96.6%	6.1%	
49.00	105 R	2	581	148.3	97.7%	5.0%	
46.50	80 R	25	583	147.1	96.9%	5.8%	
				AVG	146.6	96.6%	6.1%
				STD	1.2	0.8%	0.7%
				COV	0.8%	0.8%	12.2%
45.50	13 R	54		607	146.8	96.7%	6.0%
46.50	65 R	31		615	149.2	98.3%	4.5%

Table E-3 (Cont'd.)
OCNCOR2

3411

				UNIT WT MARSHALL IN PLACE		
				** pcf	DENSITY	AIR Voids
STA ft	OFFSET ft	NDT NO.	DSM k/in	*****	*****	*****
47.00	80 R	24	617	146.4	96.5%	6.2%
47.50	13 L	63	619	146.9	96.8%	5.9%
46.00	105 R	8	642	146.8	96.8%	6.0%
2.50	15 R	209	648	147.2	97.0%	5.7%
4.50	15 R	211	666	147.7	97.3%	5.4%
46.50	13 R	53	688	146.8	96.8%	6.0%
				Avg	147.2	97.0%
				STD	0.8	0.5%
				COV	4.2%	0.6%
						9.2%
46.00	26 R	48	725	147.1	96.9%	5.8%
46.25	93 R	16	773	146.6	96.6%	6.1%
45.75	93 R	17	787	144.4	95.1%	7.5%
49.50	39 R	39	789	148.1	97.6%	5.1%
49.00	26 R	45	813	150.0	98.9%	3.9%
46.00	80 R	26	1030	142.8	94.1%	8.5%
49.00	52 R	34	1034	147.4	97.1%	5.6%
				Avg	146.6	96.6%
				STD	2.2	1.5%
				COV	13.9%	1.5%
						23.2%
NEW PARALLEL TAXIWAY						
41.50	15 L	125	234	147.0	96.9%	5.8%
44.00	15 R	121	250	147.6	97.3%	5.4%
42.50	15 L	126	268	145.9	96.2%	6.5%
42.00	15 R	123	272	143.1	94.3%	8.3%

Table E-3 (Cont'd.)

Table E-3 (Cont'd.)
OCNCOR2

3411						
			UNIT WT MARSHALL IN PLACE			
			*** PCF DENSITY AIR Voids			
STA	OFFSET ft	NDT NO.	DSM k/in			
*****	*****	*****	*****	*****	*****	*****
47.00	15 R	119	472	146.3	96.4%	6.3%
45.50	5 L	107	480	145.2	95.7%	7.0%
49.00	5 L	100	484	147.1	96.9%	5.8%
48.50	5 L	101	486	146.3	96.4%	6.3%
49.00	15 R	117	491	147.3	97.1%	5.6%
48.50	15 L	132	492	150.2	99.0%	3.8%
46.50	5 L	105	496	148.5	97.9%	4.9%
			Avg	146.8	96.8%	6.0%
			STD	1.5	1.0%	1.0%
			COV	6.4%	1.0%	16.3%
48.00	15 R	118	502	146.5	96.6%	6.2%
47.00	5 L	104	521	147.2	97.0%	5.7%
47.25	5 R	112	540	147.1	97.0%	5.8%
46.75	5 R	113	545	147.3	97.1%	5.7%
47.78	5 R	111	553	148.0	97.5%	5.2%
45.75	5 R	115	554	147.8	97.4%	5.4%
48.25	5 R	110	559	149.1	98.3%	4.5%
49.25	5 R	108	619	147.3	97.1%	5.7%
48.75	5 R	109	658	147.2	97.0%	5.7%
			Avg	147.5	97.2%	5.5%
			STD	0.7	0.5%	0.4%
			COV	8.1%	0.5%	8.1%

COMBCOR2

TABLE E-4

COMBINED DATA BASE - NUCLEAR
GROUPED ACCORDING TO DSM

DSM k/in	NUCLEAR	
*****	MARSHALL IN PLACE DENSITY AIR Voids	
*****	*****	
234	96.9%	5.8%
244	95.9%	6.7%
245	96.0%	6.6%
247	97.2%	5.4%
250	97.3%	5.4%
259	97.1%	5.6%
263	95.7%	6.8%
268	96.2%	6.5%
269	96.5%	6.2%
270	97.2%	5.5%
272	94.3%	8.3%
273	96.3%	6.3%
273	96.1%	6.5%
277	96.4%	6.2%
277	95.5%	7.0%
279	97.0%	5.6%
283	96.3%	6.3%
290	98.3%	4.4%
294	97.0%	5.8%
295	95.6%	7.0%
295	97.1%	5.5%
295	97.5%	5.2%
297	97.1%	5.6%
299	98.0%	4.6%

AVG	273	96.6%
STD	19	0.9%
COV	6.8%	0.9% 13.7%

Table E-4 (Cont'd.)

COMBCOR2

DSM k/in	NUCLEAR	
	MARSHALL IN PLACE DENSITY	AIR VOIDS
301	96.0%	6.7%
302	96.3%	6.3%
302	97.3%	5.3%
306	98.7%	3.9%
307	96.3%	6.4%
308	95.5%	7.1%
308	95.5%	7.0%
308	97.8%	4.9%
308	96.4%	6.2%
309	95.6%	6.9%
310	96.3%	6.4%
311	96.7%	6.0%
311	96.2%	6.4%
313	96.3%	6.4%
313	95.1%	7.6%
313	96.6%	6.0%
313	97.1%	5.5%
314	97.6%	5.0%
315	96.4%	6.2%
316	96.8%	5.8%
317	97.4%	5.3%
319	94.9%	7.7%
322	98.2%	4.5%
322	96.7%	6.0%
324	95.9%	6.8%
326	97.8%	5.0%
326	95.6%	7.0%
326	96.9%	5.7%
327	96.3%	6.4%
328	97.9%	4.7%
329	94.1%	8.4%
331	96.8%	5.9%
332	95.2%	7.4%
337	97.8%	4.9%
338	96.9%	5.7%
338	97.6%	5.1%
338	95.8%	6.8%
339	97.3%	5.4%
339	98.1%	4.5%
339	97.4%	5.4%
340	97.8%	4.9%
344	96.2%	6.4%
344	97.8%	4.8%
345	98.7%	4.1%
346	97.2%	5.5%
346	95.8%	6.9%
346	96.8%	5.9%

Table E-4 (Cont'd.)

COMBCOR2

DSM k/in	NUCLEAR	
	MARSHALL IN PLACE DENSITY	AIR Voids
348	95.8%	6.9%
349	95.5%	7.1%
350	96.6%	6.1%
350	97.5%	5.1%
351	97.1%	5.5%
351	98.3%	4.4%
352	96.6%	6.1%
356	94.9%	7.7%
356	97.6%	5.0%
359	96.4%	6.3%
363	96.6%	6.1%
363	97.5%	5.2%
364	97.4%	5.2%
365	97.2%	5.4%
367	96.8%	5.8%
367	96.3%	6.3%
368	94.5%	8.2%
370	96.5%	6.2%
370	97.2%	5.5%
371	96.9%	5.9%
374	95.4%	7.1%
374	97.7%	4.9%
374	95.6%	7.1%
375	96.3%	6.3%
375	96.8%	5.9%
376	95.5%	7.2%
376	97.9%	4.7%
380	95.3%	7.2%
382	97.1%	5.6%
383	96.5%	6.1%
385	97.2%	5.5%
385	96.0%	6.6%
386	96.2%	6.5%
387	98.1%	4.6%
389	96.6%	6.0%
389	95.4%	7.2%
392	97.7%	5.1%
393	98.9%	3.8%
393	95.8%	6.8%
394	96.4%	6.2%
399	97.4%	5.3%
AVG	346	96.7%
STD	28	1.0%
COV	8.1%	1.0% 16.1%
	401	95.2%
	402	97.0% 5.1%

Table E-4 (Cont'd.)

COMBCOR2

DSM k/in	NUCLEAR	
	MARSHALL IN PLACE DENSITY	AIR VOIDS
409	96.0%	6.6%
410	97.0%	5.6%
413	95.1%	7.6%
414	95.8%	6.8%
414	98.8%	3.9%
414	95.7%	7.0%
415	96.2%	6.5%
415	95.2%	7.3%
415	95.9%	6.8%
415	96.5%	6.1%
416	97.4%	5.2%
416	98.0%	4.8%
417	97.0%	5.7%
418	95.7%	6.9%
424	96.8%	6.0%
425	96.7%	5.9%
427	97.6%	5.1%
428	97.0%	5.8%
429	94.4%	8.2%
429	97.0%	5.6%
429	94.7%	8.9%
430	96.0%	6.9%
430	96.0%	6.6%
430	95.9%	6.6%
432	97.1%	5.6%
437	95.7%	6.9%
438	98.5%	4.1%
440	95.3%	7.3%
441	96.4%	6.2%
442	96.2%	6.4%
443	96.8%	5.8%
443	95.8%	6.9%
443	97.1%	5.6%
444	96.1%	7.4%
446	96.1%	6.6%
448	95.3%	7.3%
450	94.7%	8.0%
451	96.7%	6.0%
454	97.4%	5.3%
463	95.8%	6.9%
466	96.3%	7.3%
470	95.6%	6.9%
471	96.9%	5.8%
472	96.4%	6.3%
472	97.1%	5.6%
474	96.5%	6.1%
474	98.1%	4.0%
476	98.1%	4.7%

Table E-4 (Cont'd.)

COMBCOR2

		NUCLEAR	
DSM k/in		MARSHALL IN PLACE DENSITY AIR Voids	
*****		*****	
	480	95.7%	7.0%
	480	97.8%	4.9%
	483	98.5%	4.3%
	484	96.9%	5.8%
	484	97.8%	4.9%
	486	96.4%	6.3%
	487	96.9%	5.8%
	488	96.4%	6.3%
	488	94.9%	8.7%
	491	97.1%	5.6%
	492	99.0%	3.8%
	495	96.0%	6.7%
	496	97.9%	4.9%
	496	96.3%	6.3%
	499	97.4%	5.3%
-----		-----	
AVG	448	96.5%	6.2%
STD	29	1.0%	1.1%
COV	6.5%	1.1%	18.0%
-----		-----	
	502	96.6%	6.2%
	505	96.9%	5.8%
	508	96.2%	6.4%
	516	96.0%	6.7%
	517	94.8%	8.8%
	521	97.0%	5.7%
	521	95.2%	8.2%
	528	95.7%	7.0%
	530	94.6%	8.5%
	534	96.3%	6.3%
	535	97.2%	5.5%
	538	97.7%	5.1%
	540	97.0%	5.8%
	545	97.1%	5.7%
	550	95.8%	6.9%
	551	96.1%	6.6%
	553	96.3%	6.3%
	553	97.5%	5.2%
	554	97.4%	5.4%
	555	95.9%	6.8%
	559	95.8%	6.9%
	559	98.3%	4.5%
	562	96.0%	7.1%
	564	98.0%	4.8%
	566	96.7%	6.0%
	566	95.4%	7.2%
	577	97.3%	6.2%
	579	94.6%	8.0%

Table E-4 (Cont'd.)

COMBCOR2

NUCLEAR			
	DSM k/in	MARSHALL IN PLACE DENSITY	AIR VOIDS
*****	*****	*****	*****
	579	96.6%	6.1%
	581	97.7%	5.0%
	583	96.9%	5.8%
	587	92.5%	11.0%
	594	96.1%	7.3%
	599	97.7%	5.3%
-----	-----	-----	-----
AVG	550	96.4%	6.5%
STD	26	1.2%	1.3%
COV	4.7%	1.2%	20.1%
-----	-----	-----	-----
	607	96.7%	6.0%
	612	95.7%	7.3%
	615	98.3%	4.5%
	617	96.5%	6.2%
	619	97.1%	5.7%
	619	96.8%	5.9%
	621	96.8%	5.9%
	622	97.3%	5.7%
	627	95.0%	8.4%
	629	96.1%	7.4%
	637	96.6%	6.4%
	640	96.7%	6.8%
	642	96.8%	6.0%
	643	97.2%	6.0%
	648	96.5%	6.1%
	648	97.0%	5.7%
	651	97.7%	6.0%
	658	97.0%	5.7%
	658	96.5%	6.5%
	663	97.4%	5.6%
	666	97.3%	5.4%
	675	97.0%	6.0%
	684	96.5%	7.2%
	688	96.8%	6.0%
	689	95.8%	7.9%
-----	-----	-----	-----
AVG	643	96.8%	6.2%
STD	24	0.7%	0.8%
COV	3.8%	0.7%	13.2%
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	701	96.1%	7.0%
	705	98.6%	4.4%
	706	97.1%	5.8%
	714	97.3%	6.2%
	716	96.8%	6.7%
	722	94.9%	8.7%
	723	95.9%	7.5%

Table E-4 (Cont'd.)

COMBCOR2

NUCLEAR

DSM k/in	MARSHALL IN PLACE DENSITY AIR VOIDS
725	96.9% 5.8%
727	97.6% 5.3%
732	96.1% 7.5%
755	97.7% 5.4%
757	98.8% 4.1%
761	97.0% 6.6%
772	97.7% 5.2%
772	97.2% 5.7%
773	96.6% 6.1%
781	94.9% 8.1%
781	95.2% 7.9%
787	95.1% 7.5%
787	97.0% 5.9%
788	97.5% 5.4%
789	97.6% 5.1%
AVG	96.8% 6.3%
STD	1.1% 1.2%
COV	1.1% 19.0%
802	95.5% 7.4%
813	98.9% 3.9%
816	95.1% 8.4%
826	97.3% 5.9%
830	96.3% 6.7%
836	96.3% 6.6%
846	94.5% 9.1%
848	97.4% 6.1%
858	96.6% 6.9%
858	97.8% 5.7%
860	96.3% 6.5%
865	97.6% 5.2%
865	96.8% 6.3%
868	97.4% 5.5%
868	96.0% 7.0%
877	96.1% 7.3%
883	95.1% 7.9%
883	96.7% 6.1%
886	98.1% 5.1%
891	96.0% 7.1%
897	94.2% 9.1%
898	95.2% 8.2%
AVG	96.4% 6.7%
STD	1.2% 1.3%
COV	1.2% 19.0%

Table E-4 (Cont'd.)

COMBCOR2

NUCLEAR			
DSM k/in	MARSHALL IN PLACE DENSITY AIR Voids		
907	97.4%	5.4%	
921	95.8%	7.9%	
926	96.4%	7.1%	
927	94.9%	8.5%	
929	99.1%	4.1%	
936	97.0%	6.5%	
952	98.6%	4.6%	
956	96.7%	6.1%	
961	96.2%	6.8%	
966	95.6%	7.5%	
969	95.9%	7.1%	
974	94.8%	8.3%	
974	97.0%	6.5%	
975	96.1%	6.7%	
978	96.7%	6.1%	
998	97.6%	5.4%	
AVG	96.6%	6.5%	
STD	2.5	1.2%	1.2%
COV	2.6%	1.2%	18.5%
1026	95.3%	7.5%	
1030	94.1%	8.5%	
1034	97.1%	5.6%	
1057	95.4%	7.3%	
1058	95.4%	8.0%	
1064	96.0%	7.7%	
1083	98.1%	4.9%	
1110	97.1%	5.9%	
1129	96.0%	7.1%	
1130	96.9%	6.1%	
1137	97.4%	5.5%	
1183	97.8%	5.2%	
1193	95.8%	6.0%	
1224	95.1%	8.4%	
1238	96.7%	6.1%	
1273	94.9%	8.7%	
1291	98.3%	4.7%	
1309	97.4%	5.6%	
1327	98.1%	4.9%	
1355	96.8%	6.3%	
1408	96.8%	6.0%	
1663	98.0%	4.8%	
1941	97.7%	5.1%	
AVG	96.6%	6.4%	
STD	2.14	1.2%	1.3%
COV	17.4%	1.2%	19.7%

END

DATE

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